

Workshop Manual

Octavia II 2004 ➤

Octavia II 2010 ➤

Axles, steering

Edition 05.2018

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List of Workshop Manual Repair Groups

Repair Group

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – Technical data

1 Safety instructions

(SRL001172; Edition 05.2018)

⇒ [“1.1 Safety precautions when working on vehicles with a start/stop system”, page 1](#)

⇒ [“1.2 Safety precautions during road tests in which testing and measuring equipment is used”, page 2](#)

⇒ [“1.3 Safety precautions when working on the assembly carrier”, page 2](#)

1.1 Safety precautions when working on vehicles with a start/stop system

When working on vehicles with start/stop system, please observe the following instructions:



WARNING

Risk of injury as a result of automatic engine start in vehicles with start/stop system.

- ◆ *In vehicles with the start/stop system activated (identifiable by an indication in the dash panel insert) the engine can start automatically if required.*
- ◆ *It is necessary to ensure that the start-stop system is deactivated when carrying out work on the vehicle (switch ignition off and if required switch ignition on again).*

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1.2 Safety precautions during road tests in which testing and measuring equipment is used

Note the following if testers and measuring instruments have to be used during a road test:



WARNING

There is a risk of accident from deflection and insufficient securing of testers and measuring instruments.

- ◆ *Using testers and measuring instruments during driving operation causes distraction.*
- ◆ *There is an increased risk of injury from unsecured testers and measuring instruments.*
- ◆ *Always attach the testing and measurement equipment to the rear seat.*
- ◆ *Have the testing and measurement equipment operated by a 2nd person.*
- ◆ *Always operate the testing and measurement equipment from the rear seat.*
- ◆ *Do not operate the testing and measurement equipment from the front passenger seat.*
- ◆ *Persons can be injured by the release of the passenger airbag in the event of an accident.*

1.3 Safety precautions when working on the assembly carrier

- ◆ Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.
- ◆ Always replace the self-locking screws and nuts.
- ◆ Always replace corroded self-locking nuts and screws.
- ◆ Bolts on running gear components with bonded rubber bushes may be tightened only when the component is in the unladen position (unladen state)
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.

2 Accident vehicle assessment

⇒ **"2.1 Checklist for assessing the chassis of accident vehicles", page 3**

2.1 Checklist for assessing the chassis of accident vehicles

Concealed chassis damage may remain after load-bearing and wheel-bearing parts have been repaired on accident vehicles. Under certain circumstances, this hidden damage could lead to serious consequential damage during later vehicle operation. On accident vehicles it is therefore necessary to check the specified parts in the manner described and in the order specified, irrespective of the axle alignment being carried out. If you cannot find any deviations from the nominal values during axle alignment, this means the suspension does not have any deformations.

Visual inspection and check functional reliability of the steering system

- ◆ Visual inspection of deformations and cracks
- ◆ Check the play of the link rod and steering gear
- ◆ Check the state of the track rods
- ◆ Visual inspection: fault-free bellows and collars, greased
- ◆ Check electrical and hydraulic lines and hoses for abrasions, cuts or bends
- ◆ Make sure hydraulic lines, thread connections and steering gear are leak tight
- ◆ Make sure the steering gear and lines are securely fastened
- ◆ Check the faultless functioning of the steering over the entire steering range by turning the steering from one extreme angle to the other; when applying constant pressure, the steering wheel should turn without juddering

Visual inspection and check functional reliability of the chassis

Adhere to the sequence of the following inspection steps!

- ◆ Check all of the parts listed in the summary of components to make sure they are not deformed, cracked or otherwise damaged
- ◆ Replace damaged component parts
- ◆ Align the vehicle on a Škoda-approved alignment gauge

Visual inspection and check functional reliability of the wheels, tyres

- ◆ Check for evenness and balance
- ◆ Make sure the profile or side wall has not cracked or been damaged as a result of the impact
- ◆ Check tyre pressure; compare pressure with the specification on the tank flap

The tyre must be replaced if the rim and/or tyre is/are damaged. The same applies if non-recognizable damages are assumed to have occurred, given the type of accident and ensuing damage to the vehicle.

If in doubt, the following always applies:

Whenever a safety risk cannot be excluded, the tyre(s) must be renewed.



Whole vehicle

Check other vehicle systems, such as:

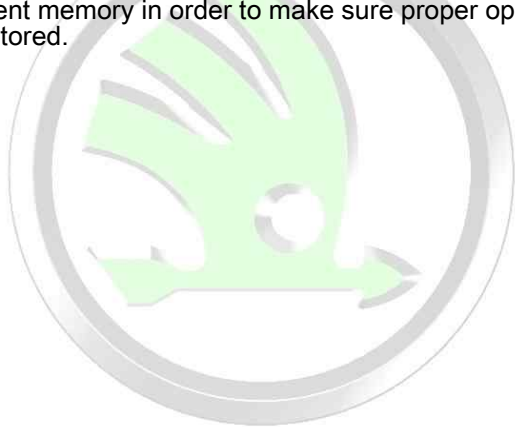
- ◆ Brake system including ABS
- ◆ Exhaust gas system, occupant protection system: visual inspection and check functional reliability

For check values, settings and notes, refer to the appropriate repair manual/the ELSA system.

The examination of accident vehicles described in this document only relates to the chassis and does not constitute a complex examination of the entire vehicle.

Electronic vehicle systems

For basic safety systems, such as: anti-block system; airbag; electronically-controlled suspension systems; electro-mechanical and electro-hydraulic steering systems; on other driver assistance systems, the saved error messages may need to be retrieved from the ⇒ Vehicle diagnostic tester system where necessary. If the indicated system faults are saved in the event memories, they must be correct according to the instructions in the repair manual/ELSA system. After a successful repair, the systems concerned must be re-examined to make sure no entries are in the event memory in order to make sure proper operation has been restored.



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3 Repair instructions

⇒ ["3.1 Steering gear", page 5](#)

⇒ ["3.2 Seals and sealing rings", page 5](#)

⇒ ["3.3 Bolts, nuts", page 5](#)

⇒ ["3.4 Electrical components", page 5](#)

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)

3.1 Steering gear

- ◆ Thoroughly clean all unions and the adjacent areas before disconnecting.
- ◆ When installing the steering gear, ensure the dowel sleeves are correctly located between the console and steering gear.
- ◆ Place removed parts on a clean supporting plate and cover, in order to avoid contamination. Do not use fluffy cloths!
- ◆ Only install clean parts: Remove spare parts from their wrapping immediately before installing.
- ◆ Use only the grease and sealants with specified part numbers.
- ◆ Carefully cover or close opened components if the repair is not completed immediately.

3.2 Seals and sealing rings

- ◆ Replace all gaskets and seals every time they are removed.
- ◆ After removing gaskets, examine the contact surfaces in the housing or on shafts for sharp edges or damage, and correct if necessary.
- ◆ Completely remove all liquid sealants from the sealing surfaces, making sure that no residual sealant gets into the steering box housing.

3.3 Bolts, nuts

- ◆ Slacken and tighten securing bolts and nuts of covers and housings diagonally.
- ◆ Avoid canting particularly sensitive parts such as servo motor with control unit. Loosen and tighten them diagonally in stages.
- ◆ Tightening torques are for unlubricated nuts, bolts and screws.
- ◆ Always replace the self-locking screws and nuts.

3.4 Electrical components

- ◆ Touch an earthed object - e.g. water pipe, heating, metal support or lift platform - before working on the electrical components. Please do not touch the connector contacts.

3.5 Lift the wheel bearing in the unladen weight position

Special tools and workshop equipment required

- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Tensioning strap - T10038-
- ◆ Support - T10149-



Note

All screws must always be tightened firmly in the unladen weight position to the chassis parts with rubber-metal bearings.

Unladen weight:

Unladen weight of the vehicle ready for driving (full fuel tank and washer fluid/headlight cleaning system reservoir, spare wheel and jack (if the vehicle was fitted at the factory with them), tool kit and without driver). The spare wheel, tool kit and jack must be located in the position prescribed by the vehicle manufacturer.

Rubber-metal bearings can be twisted only to a limited extent.

Therefore the axle components with rubber-metal bearings must be put in a position before tightening, which corresponds to the position while driving (unladen weight position).

Otherwise the rubber-metal bearing will be under tension and as a result, will have a lower life.

This position can be simulated on the lift platform by raising the corresponding wheel bearing housing with the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- and the uptake - T10149- .

- Before commencing work, measure e.g with a measuring tape, the dimension -a- from wheel centre to lower edge of the wheelhouse.

Measuring must be performed in the unladen weight position.

Dimension -a-

⇒ [“2 Chassis - Specified values of steering geometry”, page 302](#) .

- Note the measured value. It is required for tightening the screws/nuts.

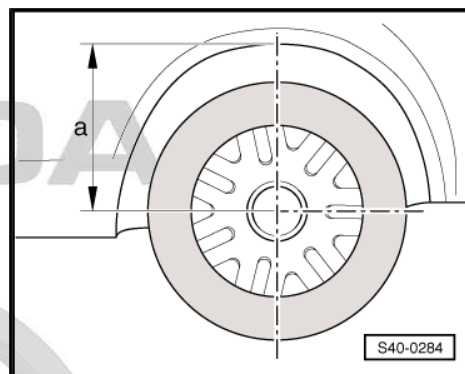
Before the corresponding wheel suspension is lifted, the vehicle must be lashed securely at the supporting arms of the lift platform with the tensioning straps - T10038- .



WARNING

If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.

- Remove wheel.
- Rotate the wheel hub until one of the holes for the wheel bolts is located at the top.
- Install support - T10149- with wheel bolt at the wheel hub.



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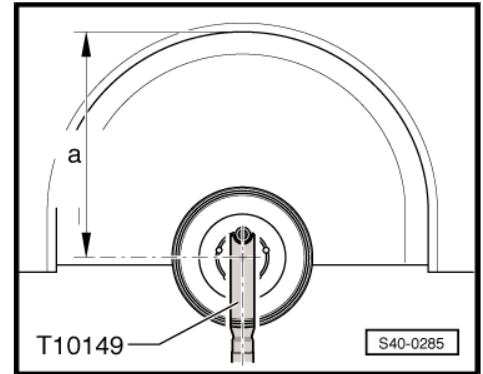
The tightening of the corresponding screw/nut must only be performed, if the measured dimension -a- between the wheel hub centre and the lower edge of the wheel house is achieved before commencing work.

- Raise up the wheel-bearing housing using the engine/gearbox jack e. g. or -V.A.G 1383A- -VAS6931- until dimension -a- ➔ [page 6](#) is achieved.



WARNING

- ◆ *Do not raise or lower the vehicle, if the engine/gearbox jack is positioned under the vehicle.*
- ◆ *Do not leave the engine and gearbox jack e. g. -V.A.G 1383A- positioned under the vehicle for longer than necessary.*



- Tighten up the corresponding screws fully to the specified tightening torque.
- Lower the wheel bearing housing.
- Pull out the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- from underneath the vehicle.
- Remove support - T10149- .
- Remove tensioning strap - T10038- .

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40 – Front suspension

1 Front axle

⇒ [“1.1 Overview - front axle”, page 8](#)

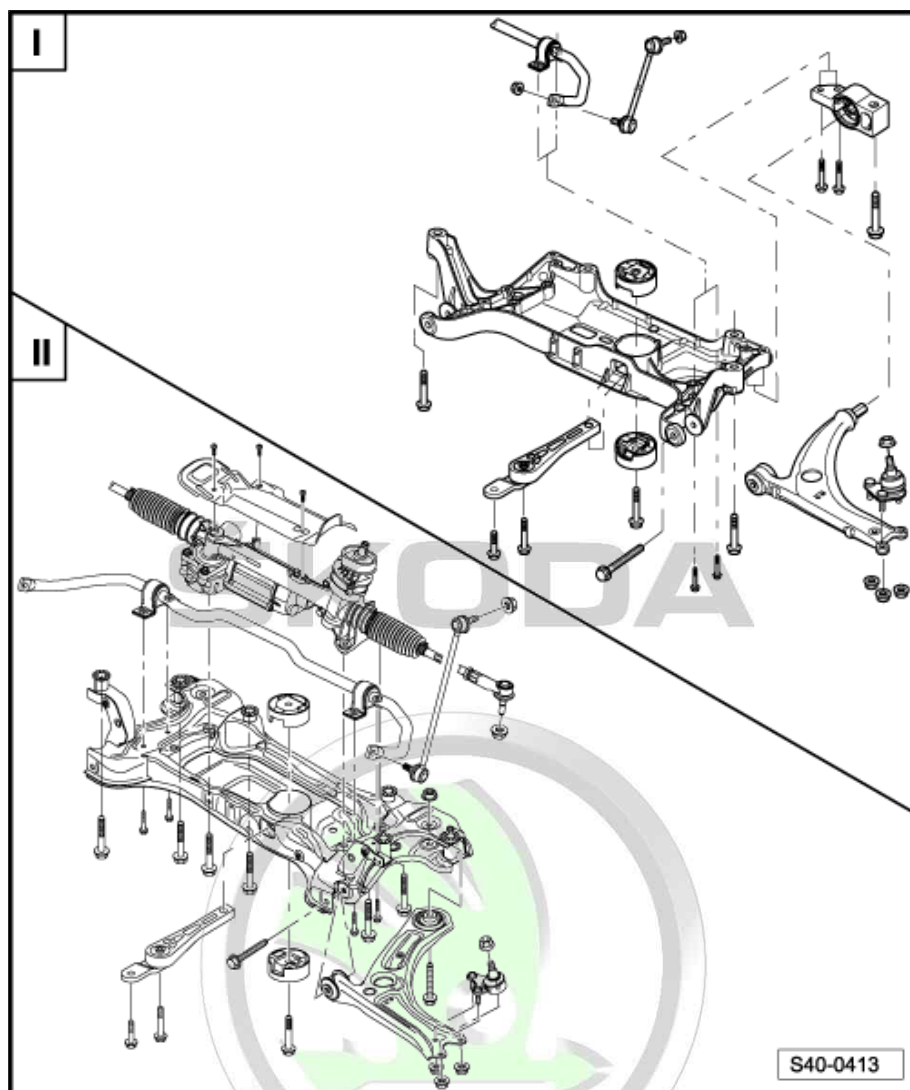
1.1 Overview - front axle

I -

⇒ [“2 Front axle with aluminium assembly carrier”, page 10](#)

II -

⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)



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III -
 ⇒ "5 Wheel bearing",
 page 121

IV -
 ⇒ "4 Wheel suspension", page
 110

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⇒ "6 Drive shaft", page 130



2 Front axle with aluminium assembly carrier

⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)

⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#)

⇒ [“2.3 Lower the assembly carrier in the service position, aluminium assembly carrier”, page 15](#)

⇒ [“2.4 Removing and installing assembly carrier without steering gear, aluminium assembly carrier”, page 19](#)

⇒ [“2.5 Removing and installing assembly carrier with steering gear, aluminium assembly carrier”, page 24](#)

⇒ [“2.6 Replacing rubber-metal bearing for pendulum support, aluminium assembly carrier”, page 33](#)

⇒ [“2.7 Removing and installing anti-roll bar, aluminium assembly carrier”, page 40](#)

⇒ [“2.8 Removing and installing coupling rods from anti-roll bars, aluminium assembly carrier”, page 43](#)

⇒ [“2.9 Removing and installing track control arm with bracket, aluminium assembly carrier”, page 44](#)

⇒ [“2.10 Replacing rubber-metal bearing for track control arm, aluminium assembly carrier”, page 51](#)

⇒ [“2.11 Replacing bracket with bearing for track control arm - aluminium assembly carrier”, page 53](#)

⇒ [“2.12 Inspecting the suspension link”, page 54](#)

⇒ [“2.13 Removing and installing the suspension link”, page 54](#)

2.1 Assembly overview - subframe, aluminium subframe



Note

- ◆ *Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.*
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

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1 - Nut

- ☐ Counterhold the internal serration of the pivot pin when tightening
- ☐ self-locking
- ☐ replace after each removal
- ☐ 65 Nm

2 - Coupling rod

- ☐ connects anti-roll bar with suspension strut
- ☐ Removing and installing
⇒ [“2.8 Removing and installing coupling rods from anti-roll bars, aluminium assembly carrier”, page 43](#)

3 - Console

- ☐ fix
⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#)
- ☐ If the console is replaced, the vehicle must be aligned
⇒ [“3.3 Axle alignment”, page 309](#)

4 - Bearing bracket

- ☐ fix
⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#)
- ☐ with rubber-metal bearing

5 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ 50 Nm + 90°

6 - Screw

- ☐ M12 x 1.5 x 90
- ☐ replace after each removal
- ☐ 70 Nm + 135°

7 - Screw

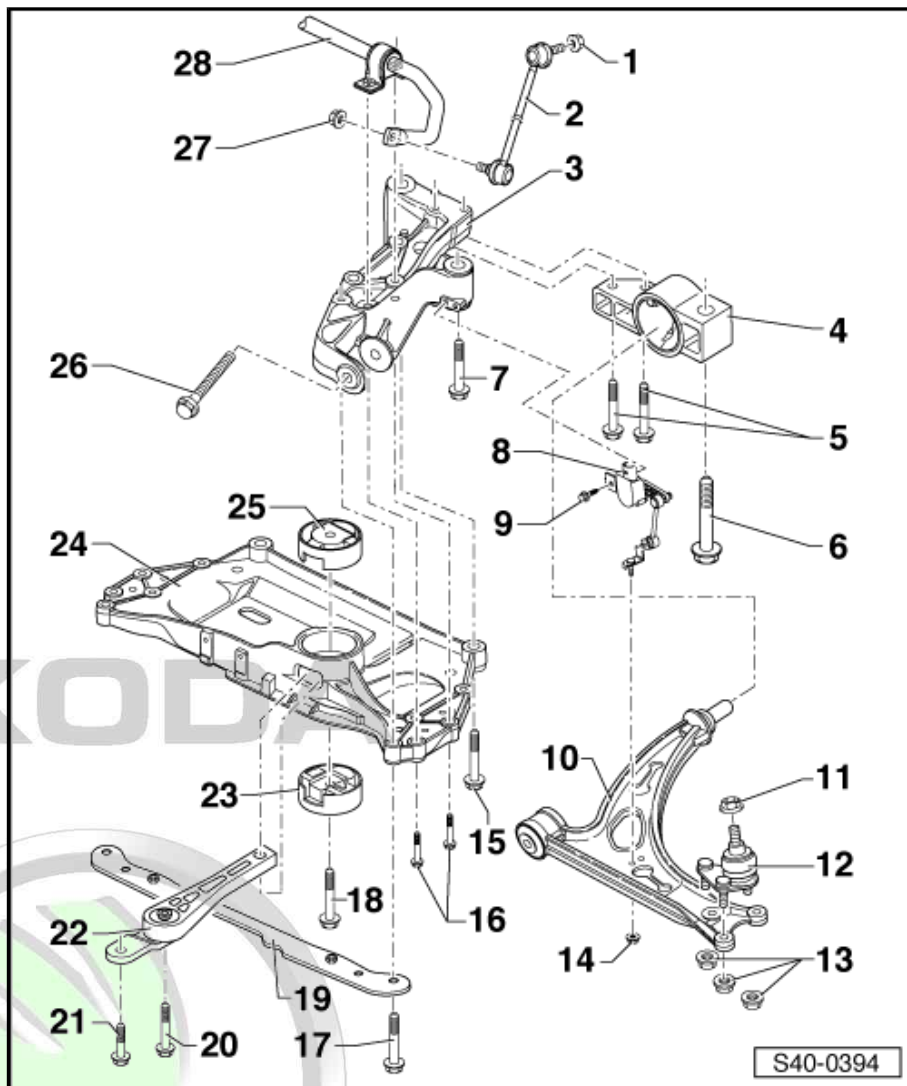
- ☐ M12 x 1.5 x 90
- ☐ replace after each removal
- ☐ 70 Nm + 135°

8 - Front left side vehicle level sensor - G78 -

- ☐ can be checked ⇒ Vehicle diagnostic tester in the guided fault detection system
- ☐ Removing and installing ⇒ [“1.3 Removing and installing front vehicle level encoder G78”, page 295](#)

9 - Screw

- ☐ 9 Nm





10 - Suspension link

- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ Removing and installing
⇒ [“2.9.1 Removing and installing track control arm with bracket, aluminium assembly carrier”, page 44](#)
- ☐ Removing and installing left track control arm with bracket, vehicles with an automatic gearbox
⇒ [“2.9.2 Removing and installing left track control arm with bearing bracket, vehicles with automatic transmission, aluminium assembly carrier”, page 47](#)
- ☐ Replacing the bearing
⇒ [“2.10 Replacing rubber-metal bearing for track control arm, aluminium assembly carrier”, page 51](#)
- ☐ different versions - steel casting/steel sheet
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

11 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 60 Nm

12 - Steering joint

- ☐ Check ⇒ [“2.12 Inspecting the suspension link”, page 54](#)
- ☐ Removing and installing ⇒ [“2.13 Removing and installing the suspension link”, page 54](#)
- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ observe left/right version
⇒ [Fig. “Fitting position according to the identification -arrow- on the suspension link””, page 13](#)

13 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Track control arm made of steel casting = 60 Nm
- ☐ Track control arm made of steel sheet = 100 Nm

14 - Nut

- ☐ 9 Nm

15 - Screw

- ☐ M12 x 1.5 x 100
- ☐ replace after each removal
- ☐ 70 Nm + 135°

16 - Screw

- ☐ M8 x 75
- ☐ replace after each removal
- ☐ 20 Nm + 90°

17 - Screw

- ☐ M12 x 1.5 x 75
- ☐ replace after each removal
- ☐ 70 Nm + 90°

18 - Screw

- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

19 - Holder of the noise insulation

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

20 - Screw

- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

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21 - Screw

- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

22 - Pendulum support

- ☐ screw first to the gearbox then to the assembly carrier
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and Installing ⇒ Engine; Rep. gr. 10

23 - Bottom rubber-metal bearing for pendulum support

- ☐ Removing and installing
⇒ [“2.6 Replacing rubber-metal bearing for pendulum support, aluminium assembly carrier”, page 33](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

24 - Assembly carrier

- ☐ Removing and installing without steering gear
⇒ [“2.4 Removing and installing assembly carrier without steering gear, aluminium assembly carrier”, page 19](#)
- ☐ Installing and removing with steering gear
⇒ [“2.5.1 Removing and installing assembly carrier with steering gear, aluminium assembly carrier, left-hand drive”, page 24](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

25 - Top rubber-metal bearing for pendulum support

- ☐ Removing and installing
⇒ [“2.6 Replacing rubber-metal bearing for pendulum support, aluminium assembly carrier”, page 33](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

26 - Screw

- ☐ M12 x 1.5 x 110
- ☐ replace after each removal
- ☐ tighten in unladen weight position ⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ 70 Nm + 180°

27 - Nut

- ☐ Counterhold the internal serration of the pivot pin when tightening
- ☐ self-locking
- ☐ replace after each removal
- ☐ 65 Nm

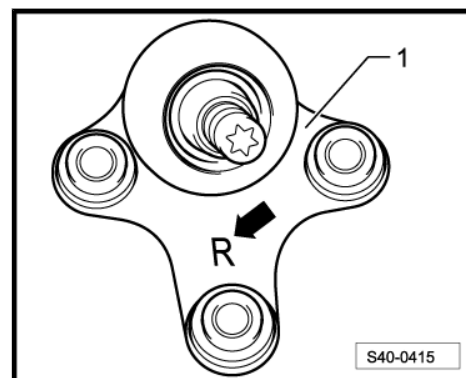
28 - Anti-roll bar

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ removing and installing
⇒ [“2.7.1 Removing and installing anti-roll bars, aluminium assembly carrier, left-hand drive”, page 40](#) ,
⇒ [“2.7.2 Removing and installing anti-roll bars, aluminium assembly carrier, right-hand drive”, page 42](#)

Fitting position according to the identification -arrow- on the suspension link

R - means right

L - means left



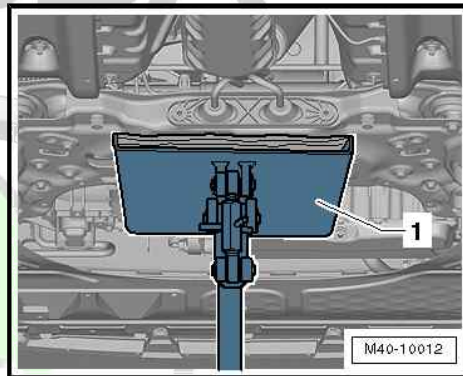
2.2 Fixing the assembly carrier and the console, aluminium assembly carrier

Special tools and workshop equipment required

- ♦ Fixing device - T10096 -
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Fixing

- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.



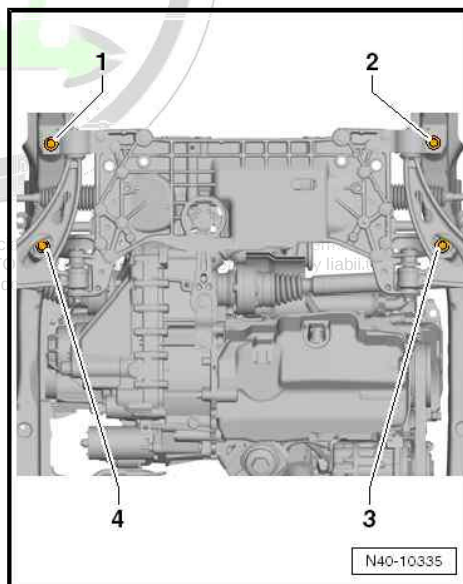
In order to fix the assembly carrier, install the fixing bolts - T10096- successively at the positions -1-, -2-, -3- and -4-.



Note

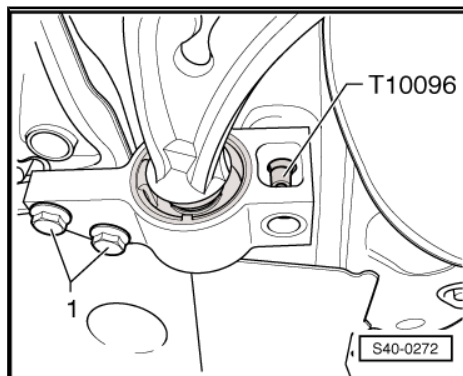
The locating pin - T10096 - must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

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Fix the brackets

- Successively tighten the fixing bolts of the brackets/body with fixing devices - T10096- and tighten to 20 Nm.



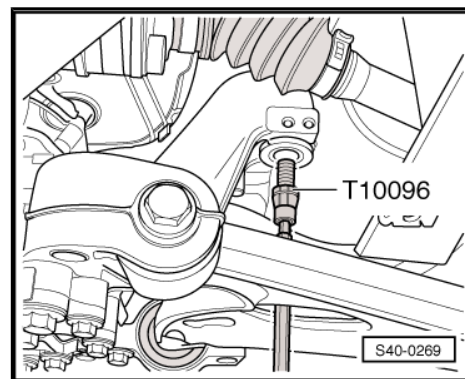
Fix the consoles

- Successively replace the fixing screws of the consoles on the body with fixing devices - T10096- and tighten to 20 Nm.

The position of the front axle is now fixed.

Installing

Installation is carried out in the reverse order. Make sure that the fixing devices - T10096- are replaced successively with new screws.



Note

It is necessary to perform an axle alignment in the event of:
⇒ ["3.3 Axle alignment", page 309](#)

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#)

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)

2.3 Lower the assembly carrier in the service position, aluminium assembly carrier

Special tools and workshop equipment required

- ◆ Fixing device - T10096-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Lower

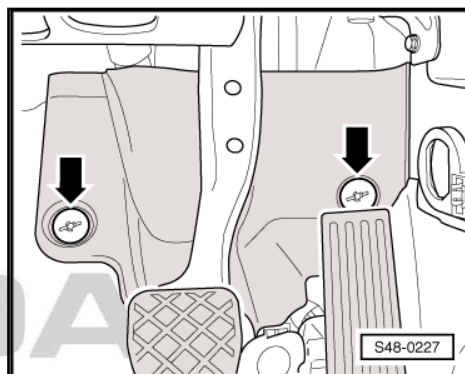
- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .



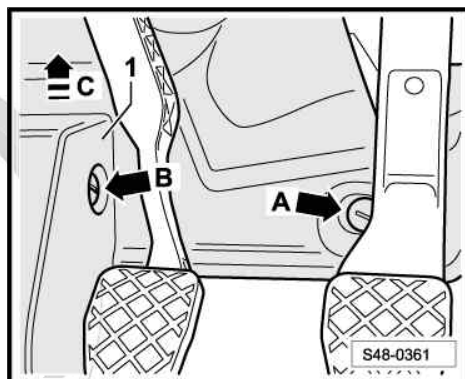
Left-hand drive

- Remove nuts -arrows- and remove the footwell trim.

Right-hand drive



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.



Continued for all vehicles

- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.

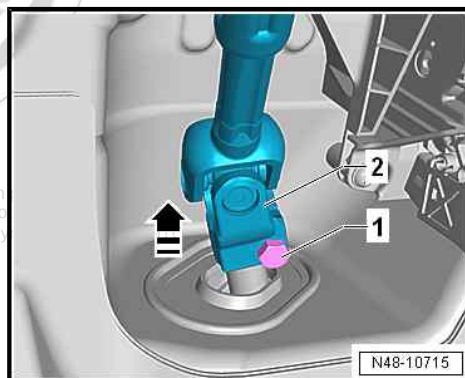


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.

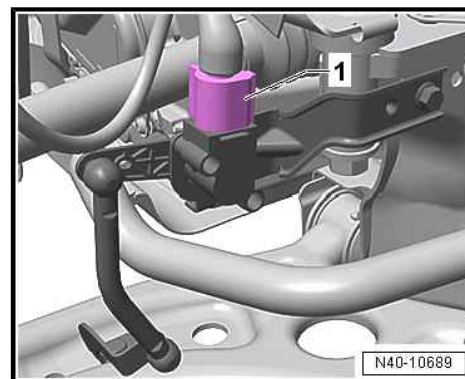


- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

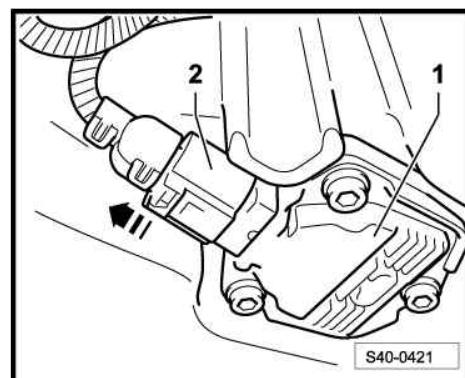
Vehicles with vehicle level sender

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

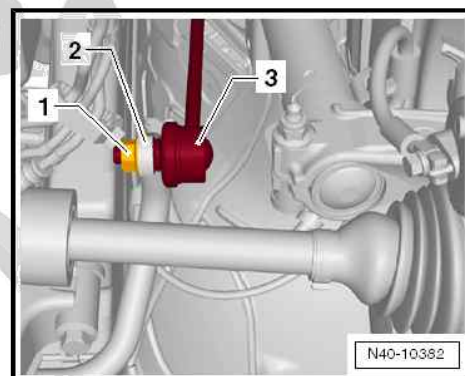
Continued for all vehicles



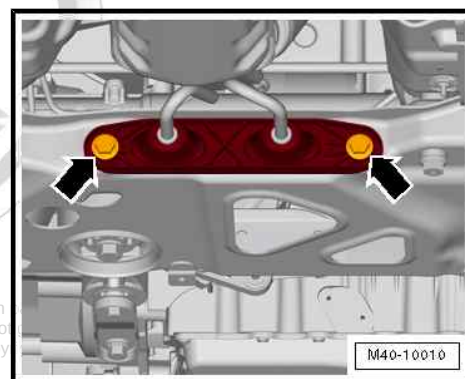
- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.



- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.



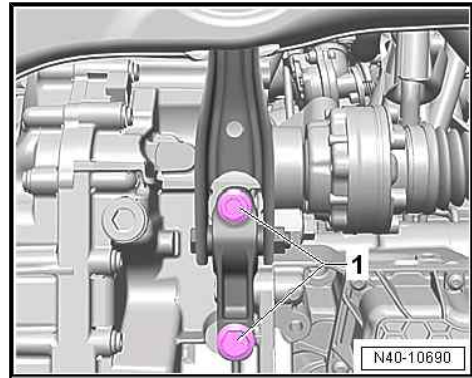
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



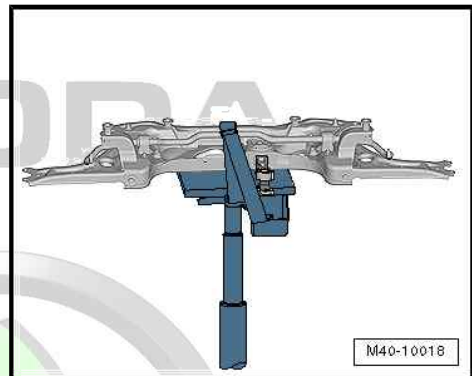
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- Unscrew screws -1- of pendulum support.
- Fix the assembly carrier
⇒ "2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14 .

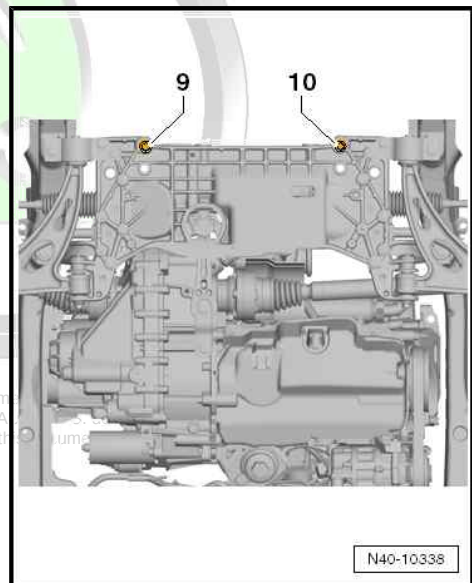


- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



- Remove the screws -9- and -10- and lower the assembly carrier by approx. 7 cm. While doing so observe the electrical cables.

Lower the assembly carrier by max. 11 cm.



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- Remove the screw -arrow- for the cable duct from the assembly carrier.
- Lower the assembly carrier by approx. 11 cm. While doing so observe the electrical cables.

Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ Make sure the boot is neither damaged nor twisted.
- ◆ Make sure all sealing surfaces are clean.
- ◆ It is necessary to perform an axle alignment in the event of:
⇒ ["3.3 Axle alignment", page 309](#)

- Replace the fixing devices - T10096- one by one with new screws

⇒ ["2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14](#) .

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#) .

Tightening torques - summaries of components



Note

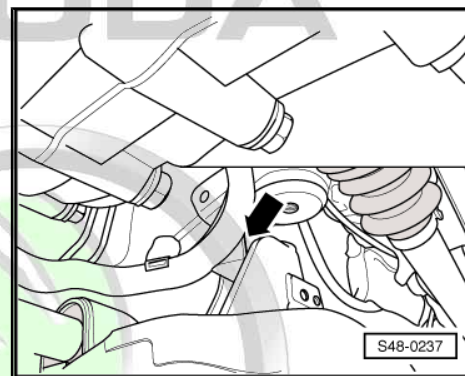
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["1.1 Summary of components - steering column", page 320](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.4 Removing and installing assembly carrier without steering gear, aluminium assembly carrier

Special tools and workshop equipment required

- ◆ Fixing device - T10096-



- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

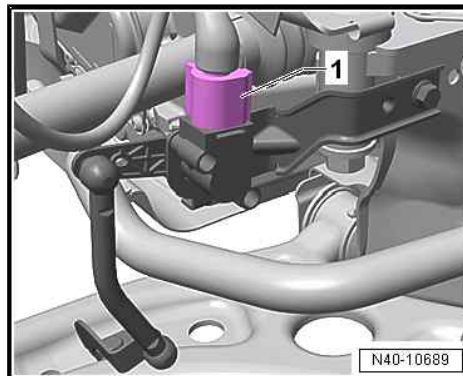
Removing

- Turn steering wheel to the straight ahead position.
- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

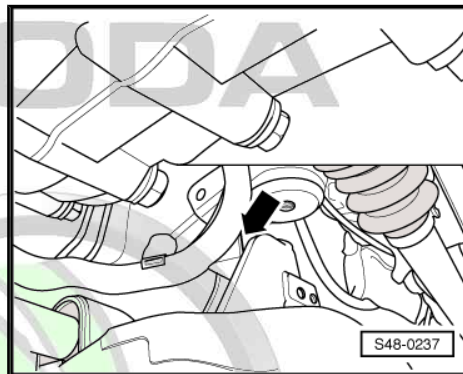
Vehicles with vehicle level sender

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

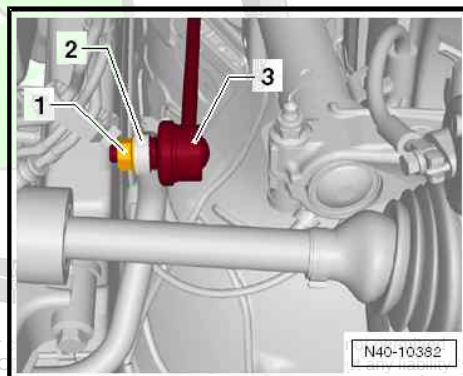
Continued for all vehicles



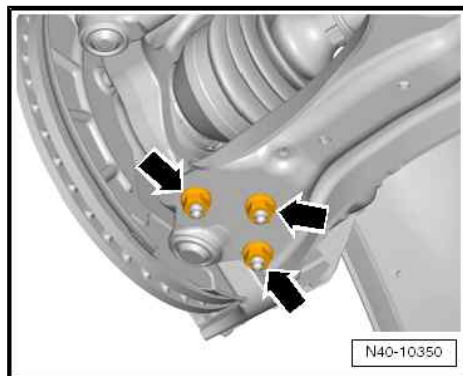
- Remove the screw -arrow- for the cable duct from the assembly carrier.



- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

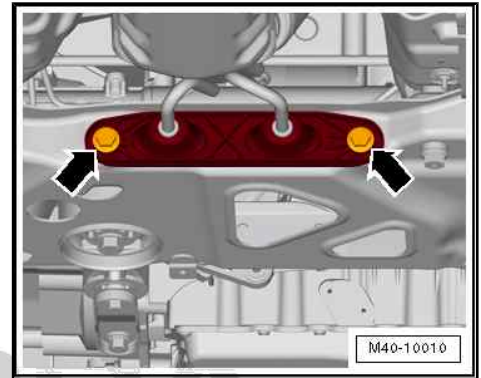


- Remove nuts for steering joint -arrow- on both sides.

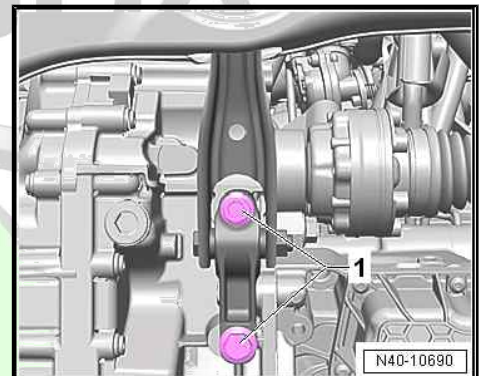


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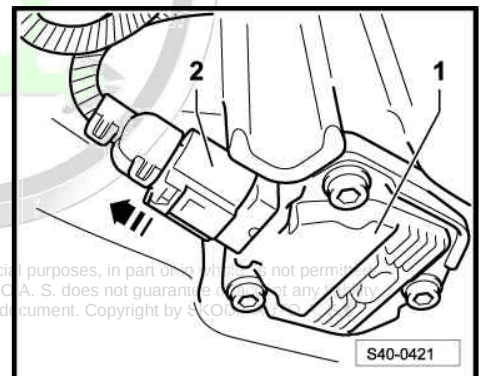
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



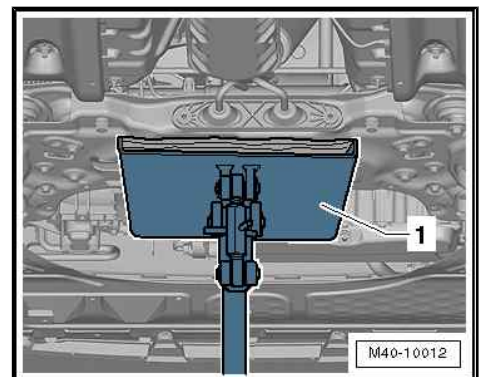
- Unscrew screws -1- of pendulum support.



- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.
- Remove steering gear fastening screws
⇒ ["2.1 Summary of components - steering gear", page 356](#) .
- Tie up the power-steering gear e.g with wire (attach), so that it maintains its position.



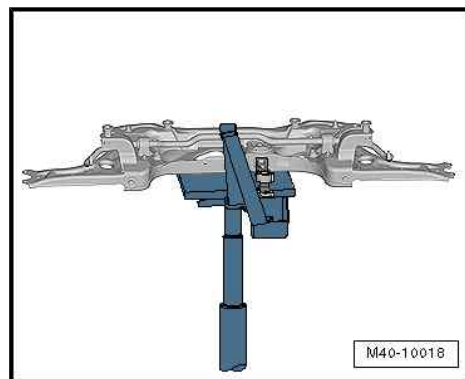
- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.
- Fix the assembly carrier with consoles
⇒ ["2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14](#) .



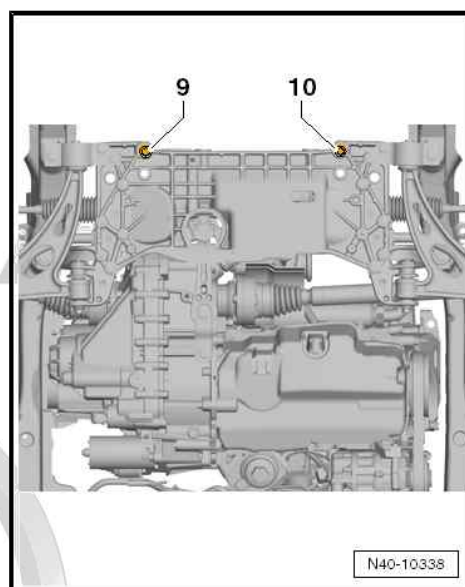
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- Secure assembly carrier on engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



- Unscrew the screws -9- and -10- and lower the assembly carrier by approx. 7 cm. While doing so observe the electrical cables.



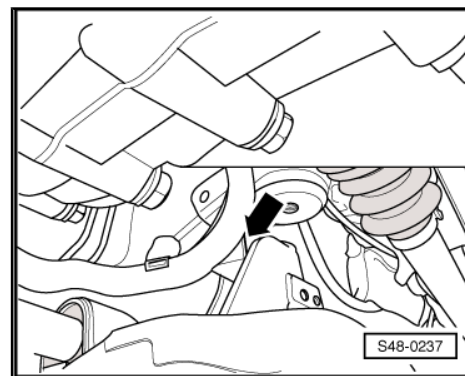
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- Remove the screw -arrow- for the cable duct from the assembly carrier.
- Slacken the wiring harness for oil level and oil temperature sender - G266- (if present).
- Lower the assembly carrier with engine/gearbox jack e. g. - V.A.G 1383A- or -VAS6931- .

Installing

Installation is carried out in the reverse order; pay attention to the following points:

- Raise the assembly carrier and fit the power steering gear onto the assembly carrier.
- Replace the fixing devices - T10096- one by one with new screws
⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#) .
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .



Note

It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.5 Removing and installing assembly carrier with steering gear, aluminium assembly carrier

⇒ "2.5.1 Removing and installing assembly carrier with steering gear, aluminium assembly carrier, left-hand drive", page 24

⇒ "2.5.2 Removing and installing assembly carrier with steering gear, aluminium assembly carrier right-hand drive", page 29

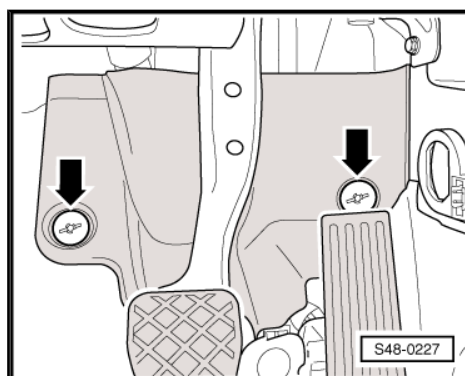
2.5.1 Removing and installing assembly carrier with steering gear, aluminium assembly carrier, left-hand drive

Special tools and workshop equipment required

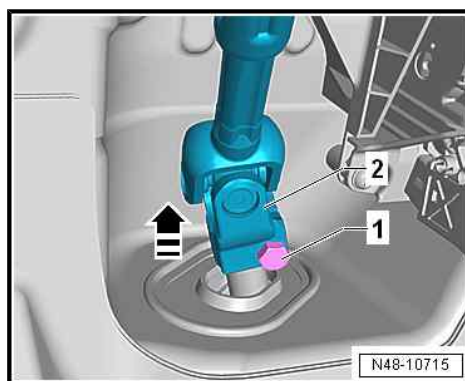
- ◆ Fixing device - T10096-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

Removing

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove nuts -arrows- and remove the footwell trim.



- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.



Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.

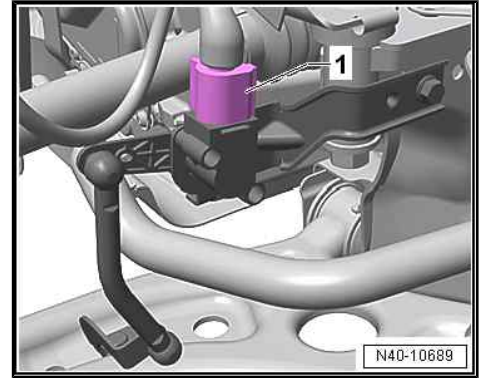
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- Remove wheels at the front;
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

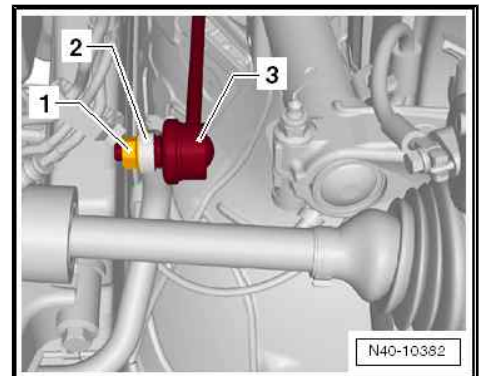
Vehicles with vehicle level sender

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

Continued for all vehicles



- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

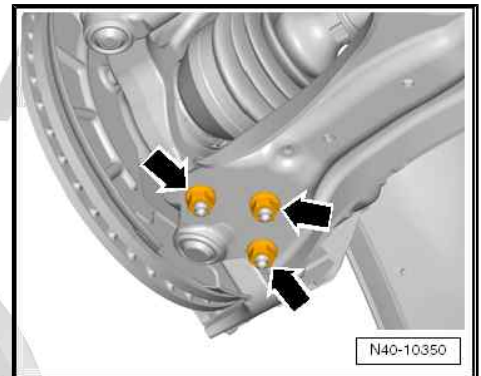


- Remove nuts for steering joint -arrow- on both sides.
- Pull the track control arm out of the steering joints.
- Loosen nut of track rod end on both sides, but do not unscrew yet.

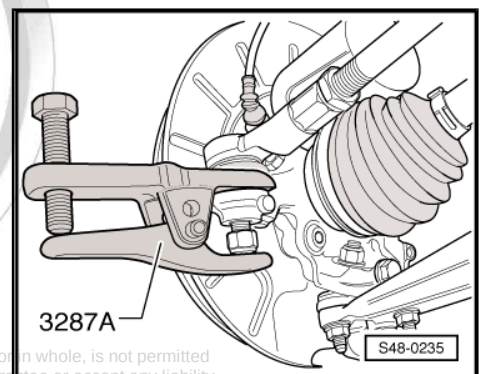


Note

To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.



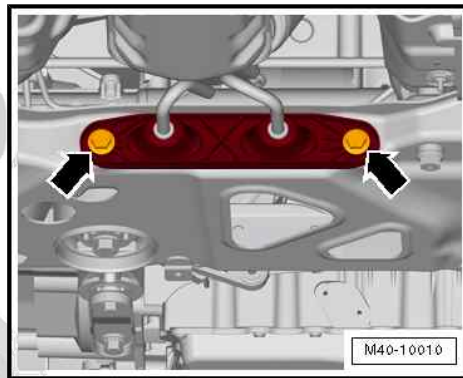
- Remove the suspension link/track rod from the wheel-bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod.



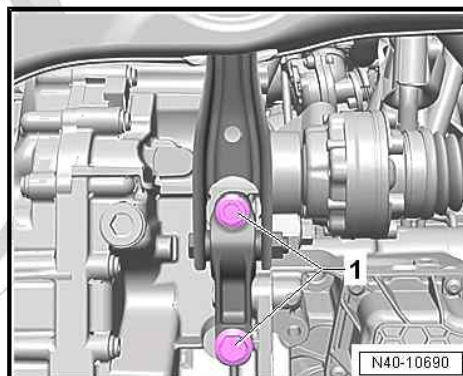
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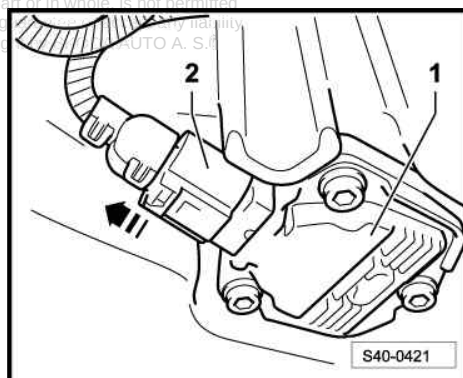
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



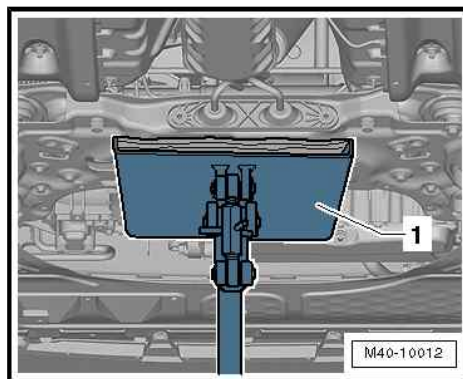
- Unscrew screws -1- of pendulum support.



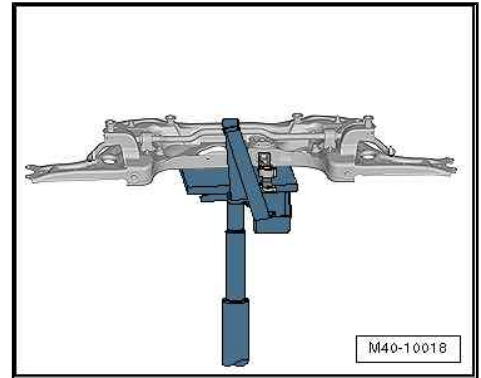
- Disconnect plug -2- for oil level and oil temperature sender -does not g... with respect to the correctness of information in this document. Copying... AUTO A. S. (C) 2018



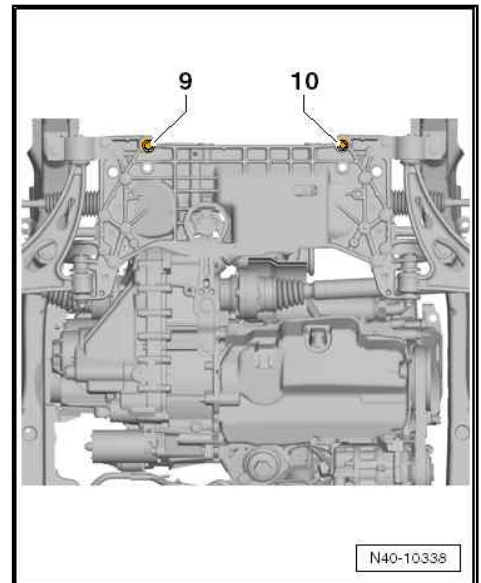
- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.
- Fix the assembly carrier with consoles
⇒ "2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14 .



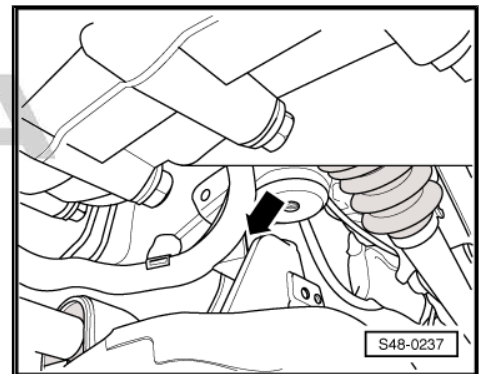
- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



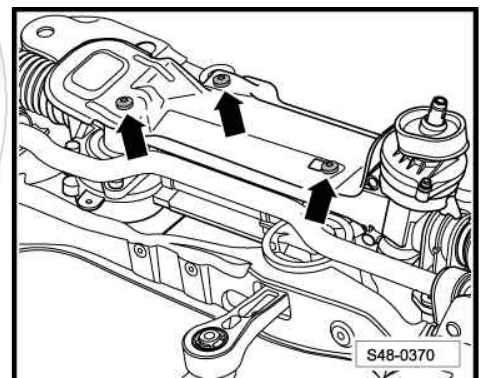
- Unscrew the screws -9- and -10- and lower the assembly carrier by approx. 7 cm. While doing so observe the electrical cables.



- Remove the screw -arrow- for the cable duct from the assembly carrier.
- Lower the assembly carrier under the body by max. 11 cm. While doing so observe the electrical cables.



- Remove the heat shield -arrows- above the steering gear.
- Unclip all the cable attachment points at the steering gear.



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- Disconnect the plug connections -1- and -2- from the steering gear.

When doing this, it is necessary to:

- Pull out the fuse of the plug connection in -direction of arrow A-.
- Press together the catch of the plug connection in -direction of arrow B- and separate the plug connection by pulling.
- Slacken the wiring harness for oil level and oil temperature sender - G266- (if present).
- Lower assembly carrier.

Installing

Installation is performed in the reverse order, pay attention to the following points:



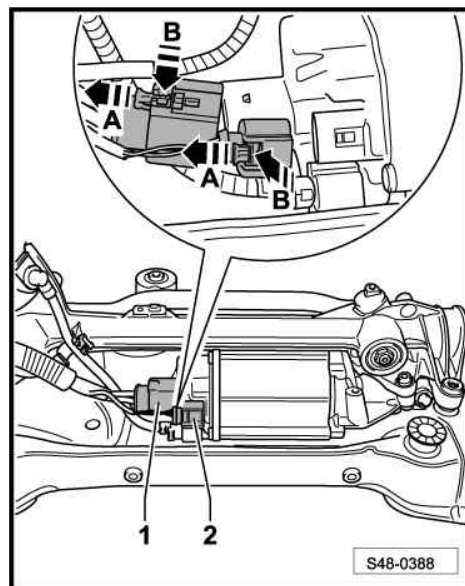
Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ When installing, make sure the steering gear boot is neither damaged nor twisted.
- ◆ It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)
- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.5.2 Removing and installing assembly carrier with steering gear, aluminium assembly carrier right-hand drive

Special tools and workshop equipment required

- ◆ Fixing device - T10096-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

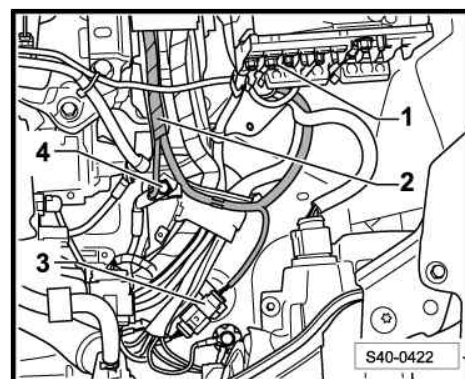
Removing



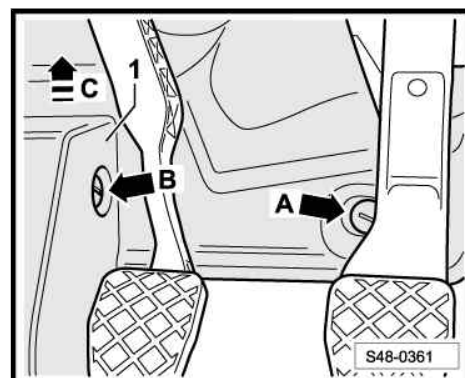
Note

On right-hand drive vehicles, the wiring harness is removed from the engine compartment at the same time when removing the assembly carrier.

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .
- Remove air filter and air guide with air mass meter ⇒ Engine; Rep. gr. 23 or ⇒ Engine; Rep. gr. 24 .
- Disconnect cable -1- from the E-box.
- Disconnect plug -3- for oil level and oil temperature sender - G266- , if present.
- Disconnect earth line -4-.
- Unclip wiring harness -2-.



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.





- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.

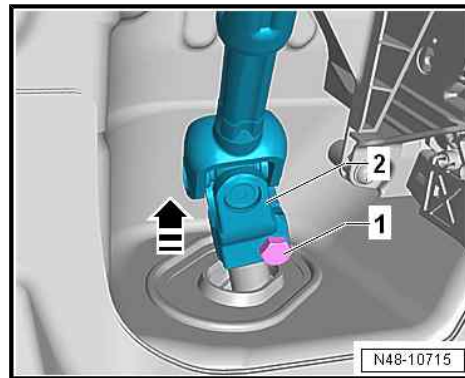


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.

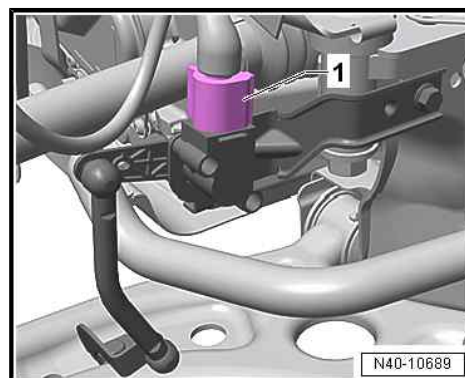


- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

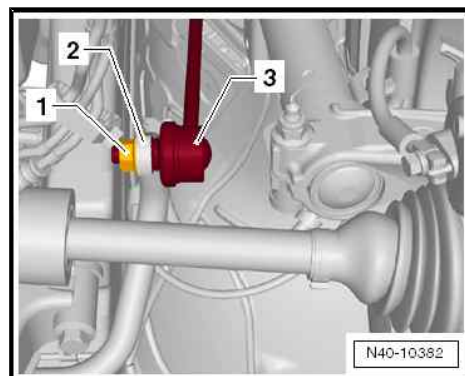
- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

Continued for all vehicles



- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

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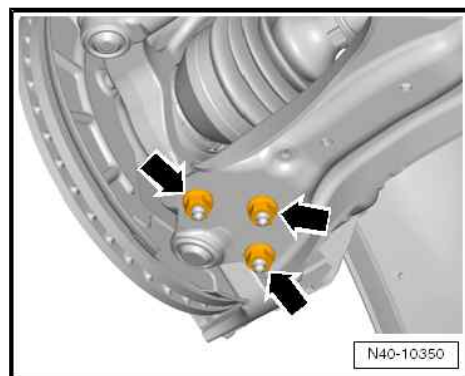


- Remove nuts for steering joint -arrow- on both sides.
- Pull the track control arm out of the steering joints.
- Loosen nut of track rod end on both sides, but do not unscrew yet.

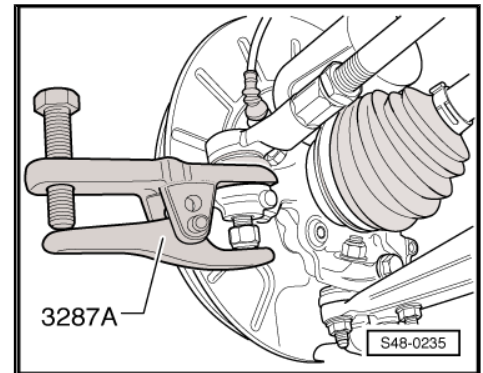


Note

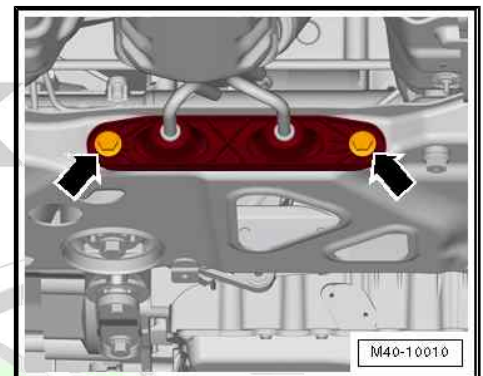
To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.



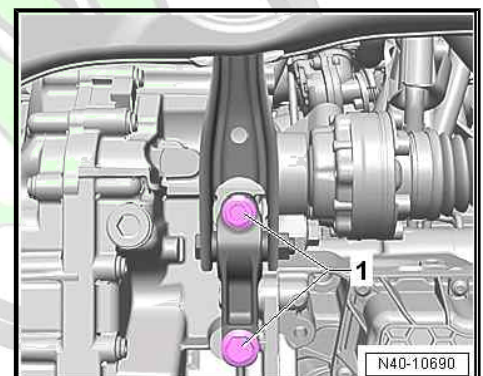
- Remove the steering joint/track rod from the wheel-bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod.



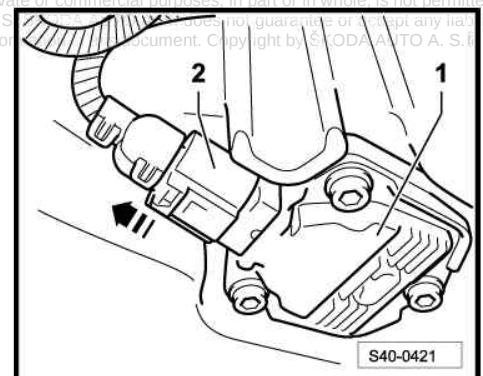
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



- Unscrew screws -1- of pendulum support.



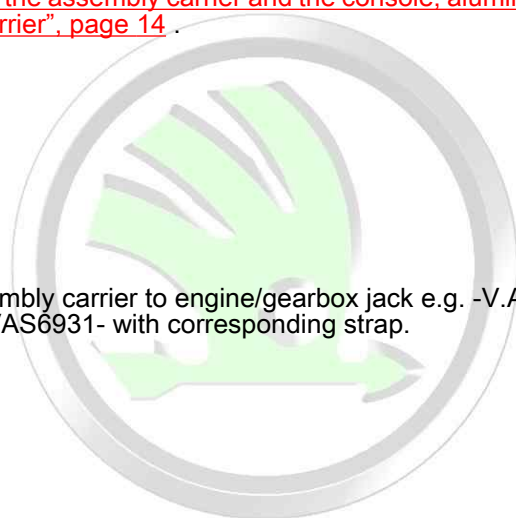
- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.



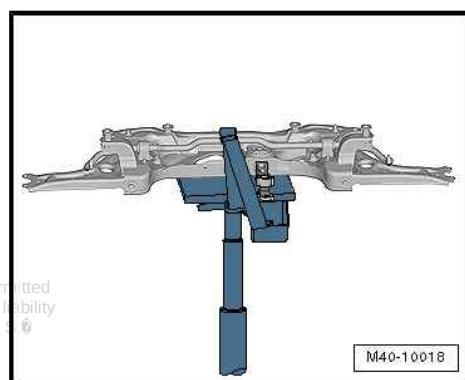
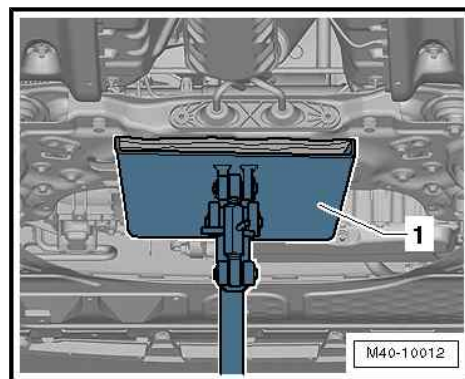
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- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.
- Fix the assembly carrier with consoles
⇒ “2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14 .



- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



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- Unscrew screws -9- and -10- and lower the assembly carrier. While doing so observe the electrical cables.

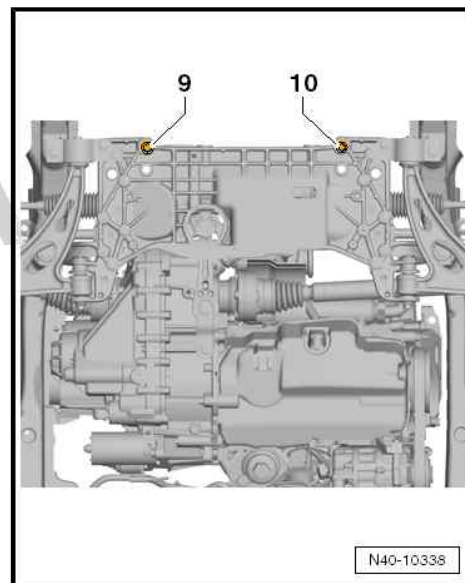
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ When installing, make sure the steering gear boot is neither damaged nor twisted.
- ◆ It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)
- Replace the fixing devices - T10096- one by one with new screws
⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#) .
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

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If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.6 Replacing rubber-metal bearing for pendulum support, aluminium assembly carrier

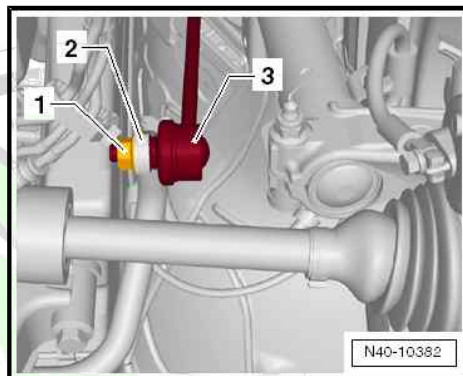
Special tools and workshop equipment required



- ◆ Hydraulic cylinder - VAS 6178-
- ◆ Foot pump - VAS 6179-
- ◆ Assembly device - VAS 6779- or -VAS 6779A-
- ◆ Pressure spindle - MP3-408 (VW 412)-
- ◆ Pressure plate - MP3-406 (VW 401)-

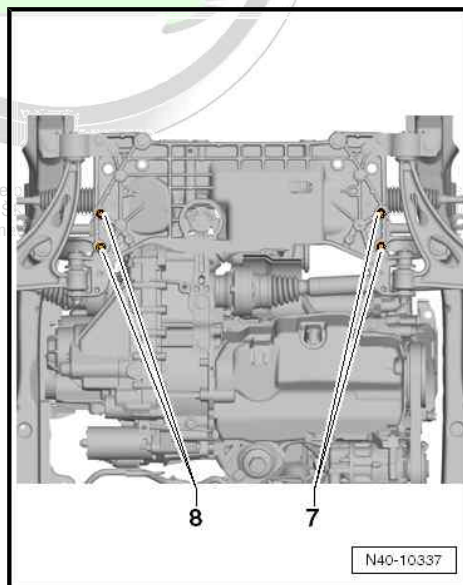
Replacing rubber-metal bearing for pendulum support.

- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.



- Remove screws -7- and -8- for anti-roll clamps.
- Leave the anti-roll bar in the installation position.
- Remove pendulum support ⇒ Engine; Rep. gr. 10 .
- Fit Assembly device - VAS 6779- or -VAS 6779A- to the assembly carrier as shown in the figure.

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- Place the pressure piece - VAS 6779/1- -1- onto the rubber-metal bearing with the flat side -arrow- in the driving direction.

1 - Thrust piece - VAS 6779/1-

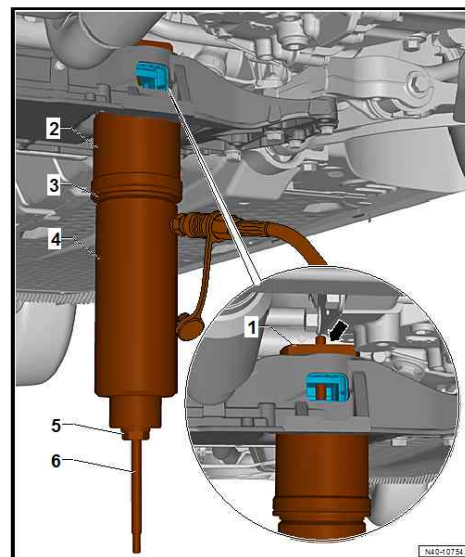
2 - Pipe - VAS 6779/4- - with the small outer diameter to the assembly carrier

3 - Thrust piece - VAS 6779/5-

4 - Hydraulic cylinder - VAS 6178-

5 - Hexagon nut - VAS 6779/3-

6 - Threaded rod - VAS 6779/2-



- Press in both bonded rubber bushes far enough for the top bonded rubber bushing -2- in the opening for pendulum support in the assembly carrier -arrow- is visible.
- Carry out a visual inspection of the rubber-metal bearing -2-.
- if the upper part is deformed, it must be disrupted through the opening in the assembly carrier -arrow-.
- Push through the outer ring for the top part of the rubber-metal bearing -2- e.g. using a cold chisel -1-.



Note

Pushing through the deformed bearing prevents tilting in the assembly carrier during removal.

- Remove both parts of the rubber-metal bearing at the same time.

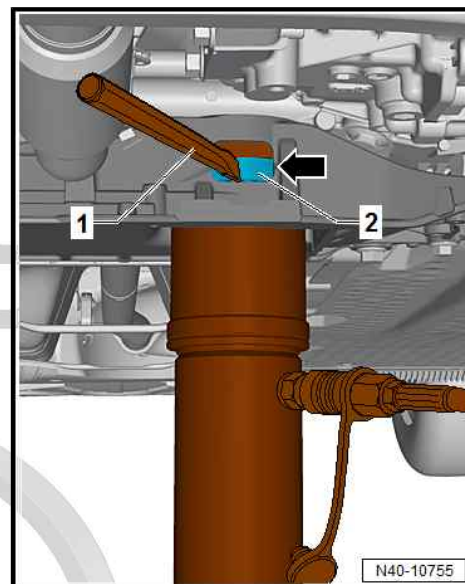
Prepare the rubber-metal bearing for pressing in



Note

- ◆ *There are two different versions of rubber-metal bearings.*
- ◆ *Assignment ➔ Electronic Catalogue of Original Parts*

I - The edges of the inner core -1- point to the recess of the rubber-metal bearing.

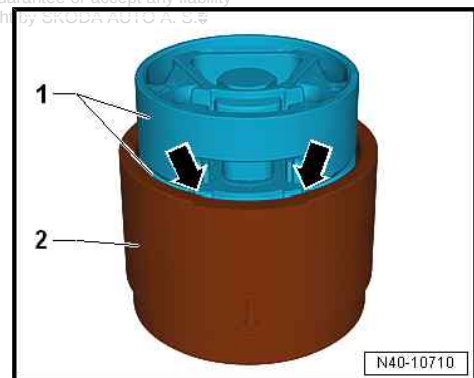
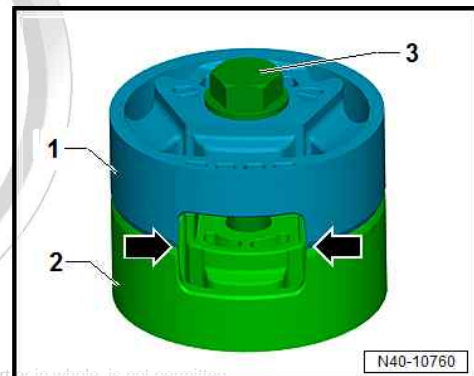
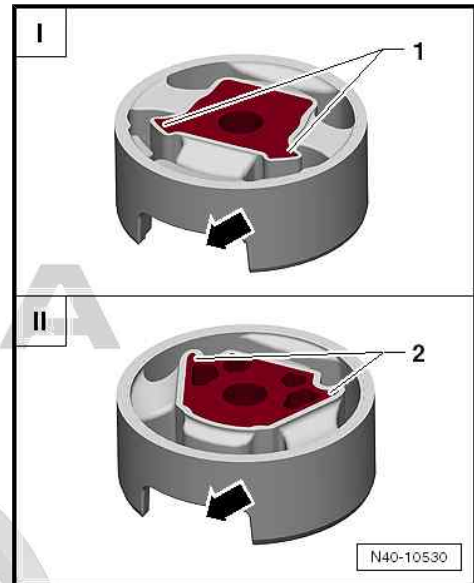




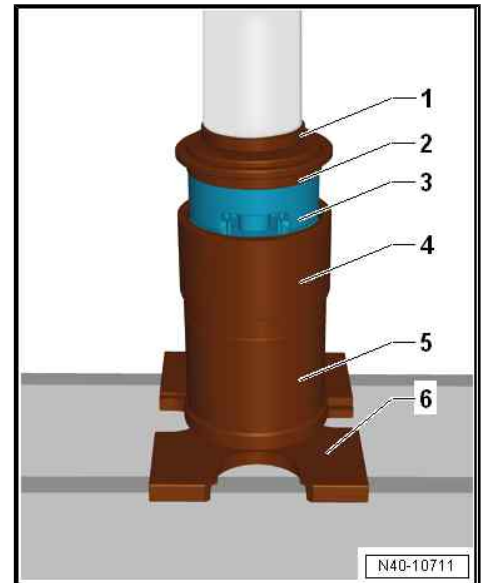
II - The edges of the inner core -2- point away from the recess of the rubber-metal bearing.

- Place the top part -1- and bottom part -2- on top of each other so that the edges of the opening -arrows- fit together precisely.
- Screw both parts together with the original screw -3- (hand-tight); the cutouts -arrows- must face each other exactly, the screw head points upwards.

- Place the rubber metal bearing on larger diameter side in the cone - VAS 6779/6- -2-.
- Align the rubber metal bearing -1- in the cone - VAS 6779/6- , the edges of the opening must lie flush opposite the recess in the cone - VAS 6779/6- -arrows-.



- Retract the rubber metal bearing -3- up to the stop in the cone - VAS 6779/6- as shown.
- 1 - Pressure spindle - MP3-408 (VW 412)-
- 2 - Thrust element - VAS 6779/5- - side with marking »A« must face upwards
- 3 - Rubber-metal bearing
- 4 - Cone - VAS 6779/6-
- 5 - Knock-in bushing - VAS 6779/4-
- 6 - Pressure plate - MP3-406 (VW 401)-
- Remove screw from rubber metal bearing.

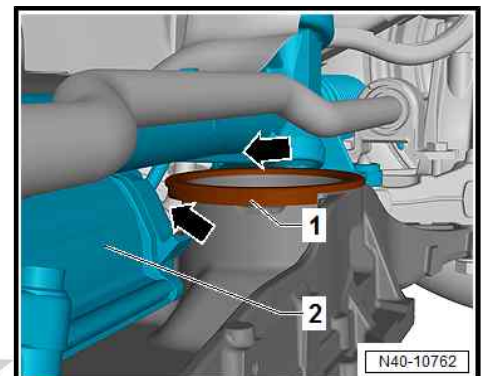


- Place the support ring - VAS 6779/11- -1- on the assembly carrier so that the nose of the clamping ring points to the left.

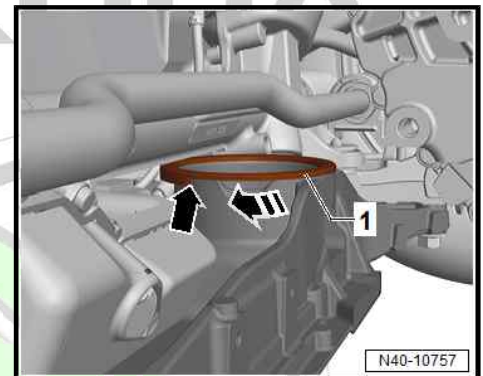


Note

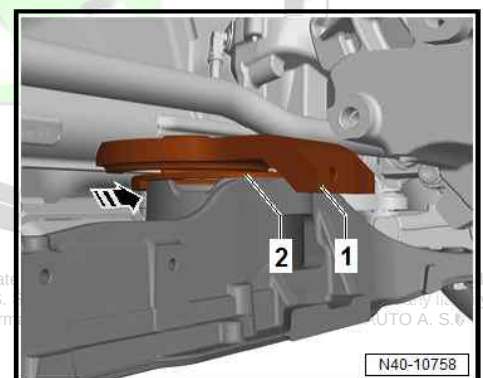
When placing the support ring - VAS 6779/11- , make sure it is at sufficient distance to the steering gear -2- -arrows-.



- Turn the support ring - VAS 6779/11- -1- in such a way that -arrow- the nose of the ring -arrow- is pointing to the rear.



- Place the counterholder - VAS 6779/7- -1- from the left in -arrow- on the support ring - VAS 6779/11- -2-.



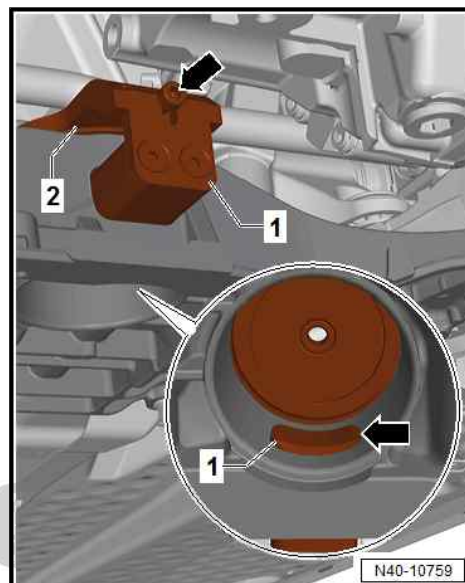


- Insert the socket insert - VAS 6779/7-1A- -1- into the opening for the pendulum support in the assembly carrier.
- Screw the plug insert - VAS 6779/7-1A- with screw -arrow- onto the counterholder - VAS 6779/7- -2-.



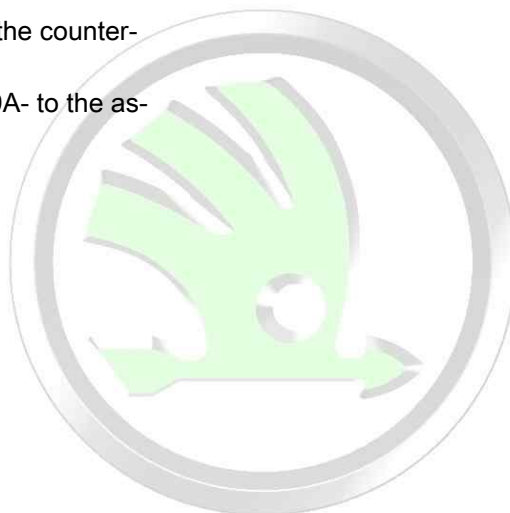
Note

Make sure that the plug insert - VAS 6779/7-1A- -1- is fitted correctly in the bore of the assembly carrier -arrow-.

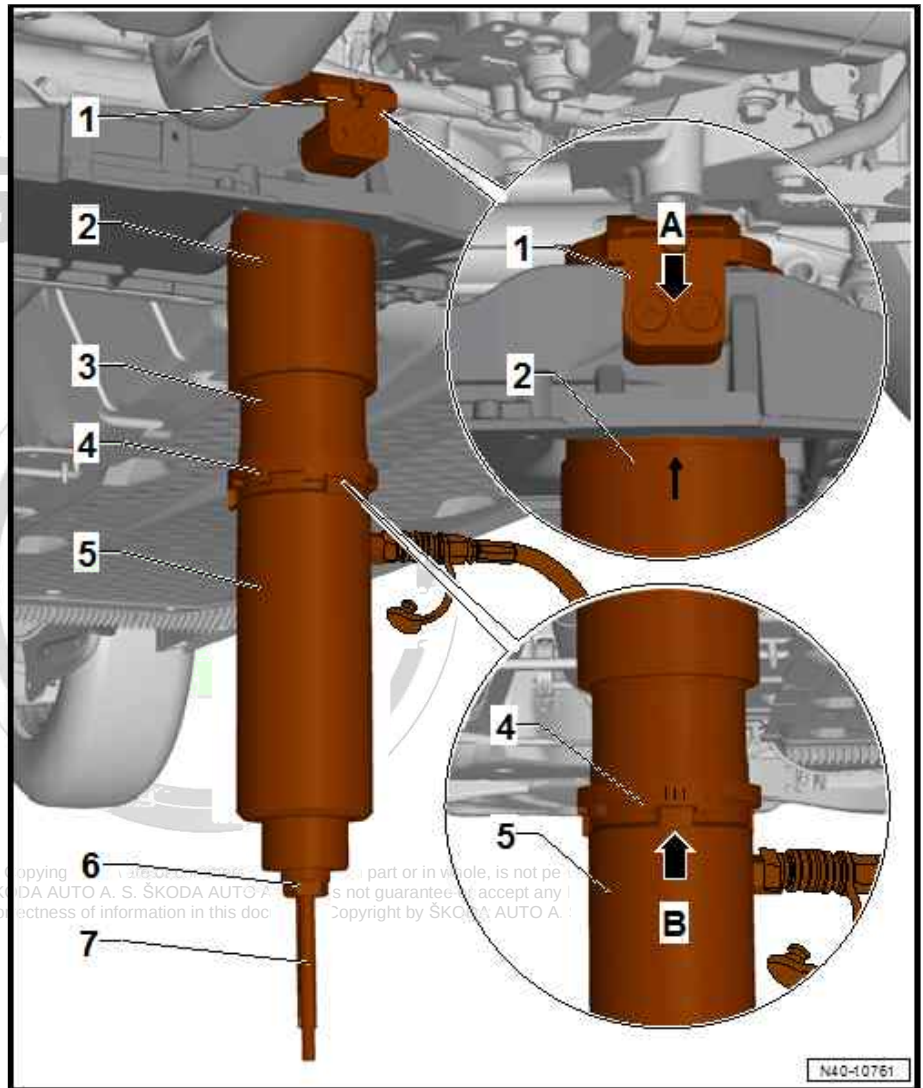


Inserting the rubber-metal bearing

- Screw the threaded rod - VAS 6779/2- -7- into the counterholder - VAS 6779/7- -1-.
- Fit Assembly device - VAS 6779- or -VAS 6779A- to the assembly carrier as shown in the figure.



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1 - Counterholder - VAS 6779/7-

2 - Cone - VAS 6779/6- , the -arrow- marking on the pipe must point exactly to the centre between the screws on the counterholder - VAS 6779/7- -arrow-

3 - Thrust piece - VAS 6779/9-

4 - Composite seal - VAS 6779/8- - the mark -IIII- on the composite seal must face the tab -Arrow B- on the pressure piece - VAS 6779/9- .

5 - Hydraulic cylinder - VAS 6178-

6 - Hexagon nut - VAS 6779/3-

7 - Threaded rod - VAS 6779/2-

- Draw in both parts of the rubber-metal bearing.
- Remove the assembly device - VAS 6779- or -VAS 6779A- from the assembly carrier.
- Check the bearing of the rubber-metal bearing.
- Screw the anti-roll bar with the assembly carrier, and the coupling rods.
- Install pendulum support ⇒ Engine; Rep. gr. 10 .



- Install the noise insulation ⇒ Body Work; Rep. gr. 50 .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ♦ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ♦ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.7 Removing and installing anti-roll bar, aluminium assembly carrier

⇒ [“2.7.1 Removing and installing anti-roll bars, aluminium assembly carrier, left-hand drive”, page 40](#)

⇒ [“2.7.2 Removing and installing anti-roll bars, aluminium assembly carrier, right-hand drive”, page 42](#)

2.7.1 Removing and installing anti-roll bars, aluminium assembly carrier, left-hand drive

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Special tools and workshop equipment required

- ♦ Fixing device - T10096 -
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ♦ Ball joint extractor - 3287A-

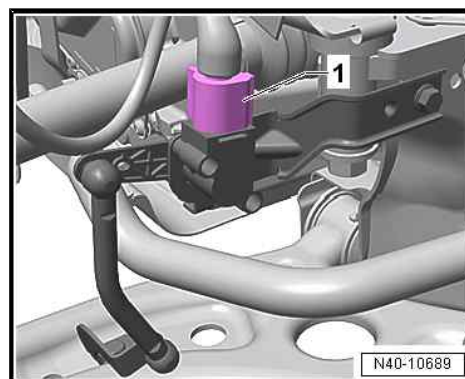
Removing

- Remove wheels.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

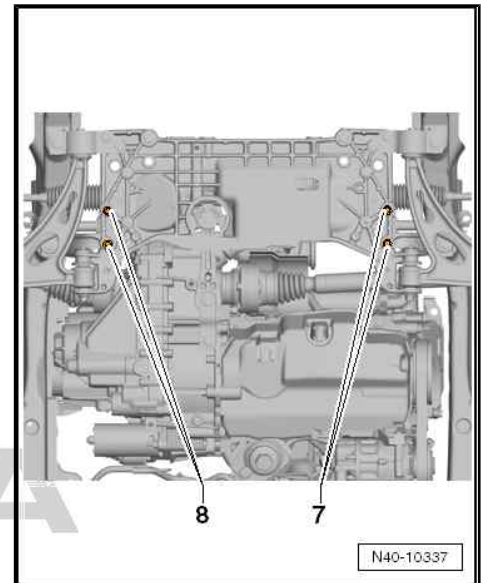
Vehicles with vehicle level sender

- Remove front left vehicle level sensor - G78- -1-
⇒ [“1.3 Removing and installing front vehicle level encoder G78”, page 295](#) .

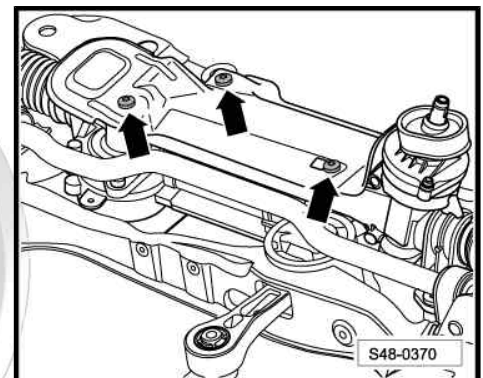
Continued for all vehicles



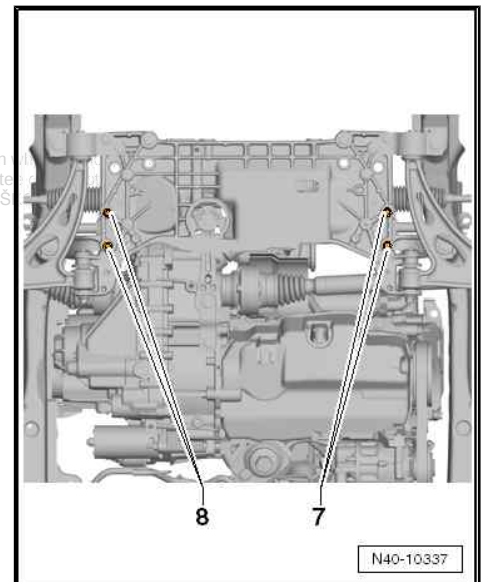
- Detach screws for stabiliser tabs -7- and -8-.
- Lower the assembly carrier in the service position
⇒ "2.3 Lower the assembly carrier in the service position, aluminium assembly carrier", page 15 .



- Remove the heat shield -1- above the steering gear.



- Remove screws for stabiliser tabs -7- and -8-.



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- Lift the anti-roll bar -1- to the front via the console, -2- off the assembly carrier.

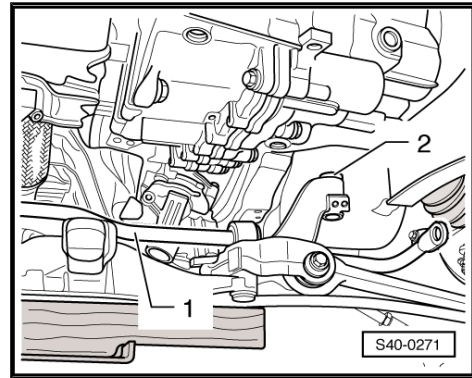
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ After positioning the steering gear on the drive shaft make sure the seal on the steering gear is not bent on the assembly plate and correctly seals the footwell opening. Otherwise this could cause water penetration and/or noise.
- ◆ Make sure all sealing surfaces are clean.
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

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If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment ⇒ "3.3 Axle alignment", page 309 .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["1.1 Summary of components - vehicle level sender front", page 293](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.7.2 Removing and installing anti-roll bars, aluminium assembly carrier, right-hand drive

Special tools and workshop equipment required

- ◆ Fixing device - T10096 -
- ◆ Ball joint extractor - 3287A-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Removing

- Remove assembly carrier without steering gear
⇒ [“2.4 Removing and installing assembly carrier without steering gear, aluminium assembly carrier”, page 19](#).
- Remove screws for stabiliser tabs -7- and -8-.
- Remove anti-roll bar from assembly carrier.

Installing

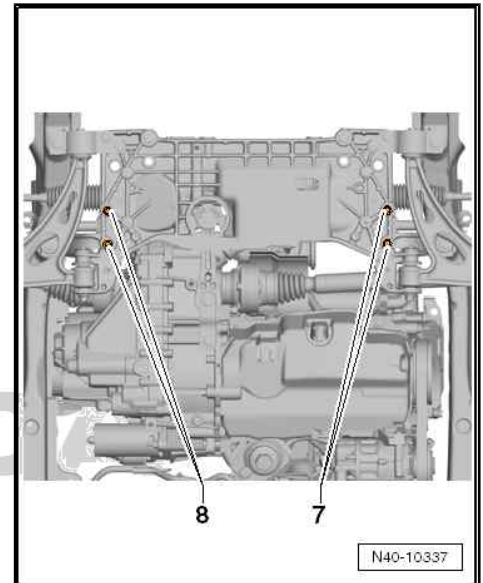
Installation is carried out in the reverse order; pay attention to the following points:

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#).*



Tightening torques - summaries of components



Note

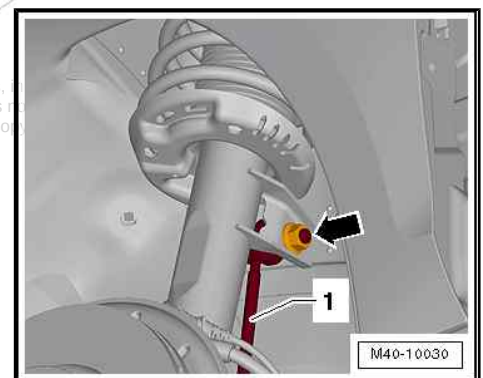
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)

2.8 Removing and installing coupling rods from anti-roll bars, aluminium assembly carrier

Removing

- Unscrew nut -arrow-.



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- Unscrew nut -1-.
- Pull out coupling rod -3- from the anti-roll bar -2-.

Installing

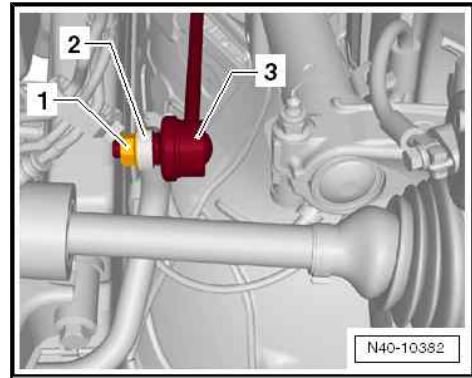
Installation is carried out in the reverse order.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)

2.9 Removing and installing track control arm with bracket, aluminium assembly carrier

⇒ [“2.9.1 Removing and installing track control arm with bracket, aluminium assembly carrier”, page 44](#)

⇒ [“2.9.2 Removing and installing left track control arm with bearing bracket, vehicles with automatic transmission, aluminium assembly carrier”, page 47](#)

2.9.1 Removing and installing track control arm with bracket, aluminium assembly carrier

Special tools and workshop equipment required

- ◆ Fixing device - T10096-

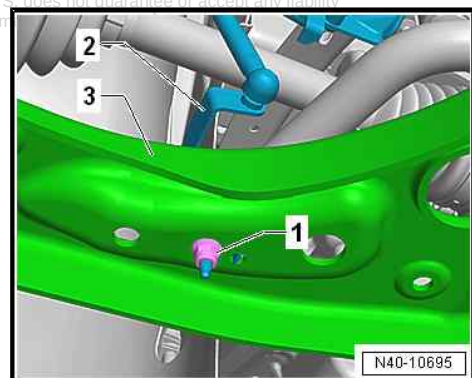
Removing

- Remove wheel.
- Dimension -a- Measure unladen weight of the vehicle
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#),
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

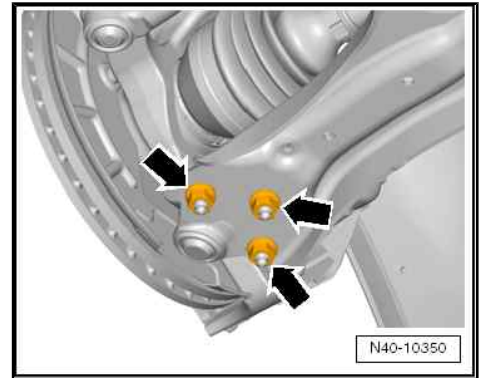
Vehicles with vehicle level sender

- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.

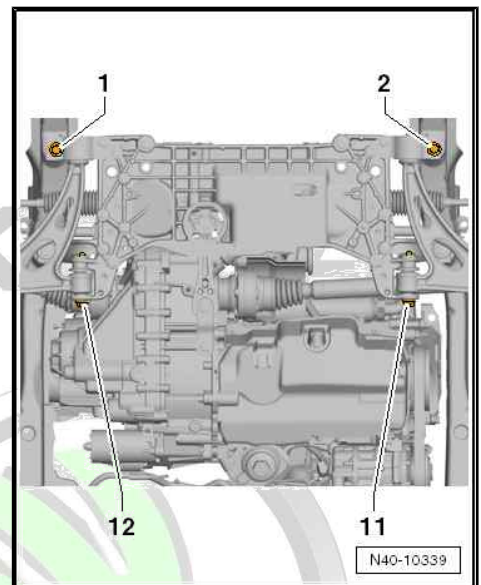
Continued for all vehicles



- Release fixing nuts -arrows-.
- Pull suspension link out of swivel joint and turn wheel bearing housing to outside to relieve load on suspension link.
- Fix position for the bracket
⇒ "2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14 .



- Remove the new screw -12- for the left vehicle side or -11- for the right vehicle side.

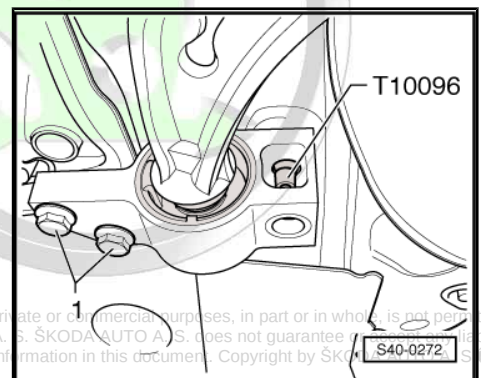


- Remove screws -1-.
- Remove track control arm.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert the track control arm along with the bracket in the assembly carrier.



Note

Tighten screws/nuts when the vehicle is in unladen weight position

⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5 .

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- Screw on new screw -11- for the right vehicle side or -12- for the left vehicle side, but do not tighten yet.

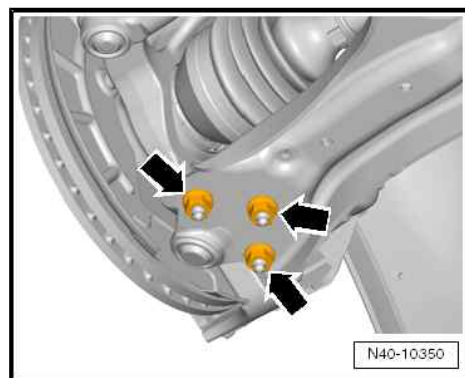
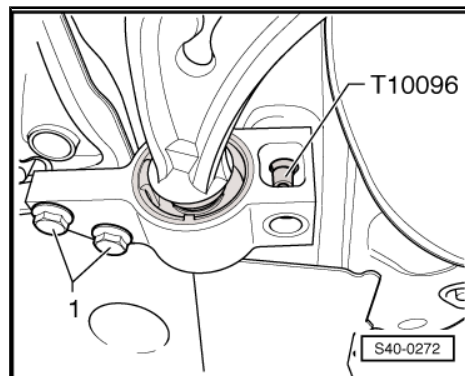
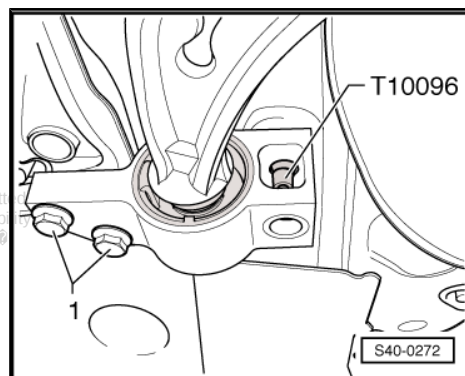
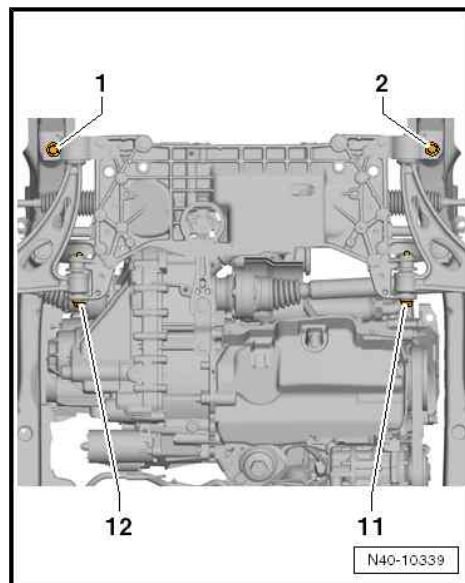
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- Insert new screws -1- and tighten.

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- Insert new screws -1- and tighten.
- Replace the fixing device - T10096- with a new screw and tighten.
- Insert swivel joint in suspension link and tighten bolts -arrows-.



- Tighten screw -11- or -12- of track control arm to console (in the unladen weight position)
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

Make sure the steering joint boot is neither damaged nor twisted.

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#).*

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

2.9.2 Removing and installing left track control arm with bearing bracket, vehicles with automatic transmission, aluminium assembly carrier

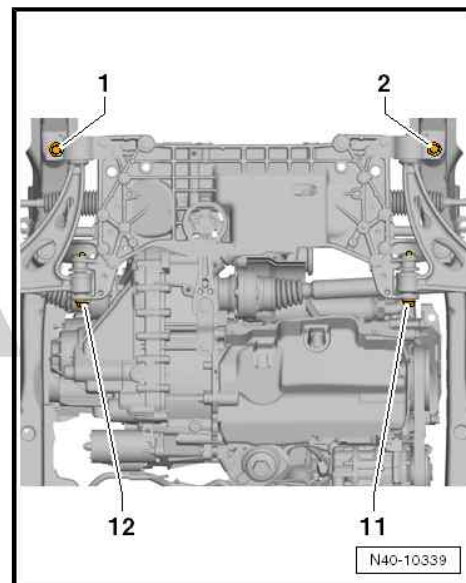
Special tools and workshop equipment required

- ◆ Fixing device - T10096-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-



Note

- ◆ *The following procedure applies to removing and installing the left suspension link.*
- ◆ *Removing and installing right suspension link
⇒ [“2.9.1 Removing and installing track control arm with bracket, aluminium assembly carrier”, page 44](#).*





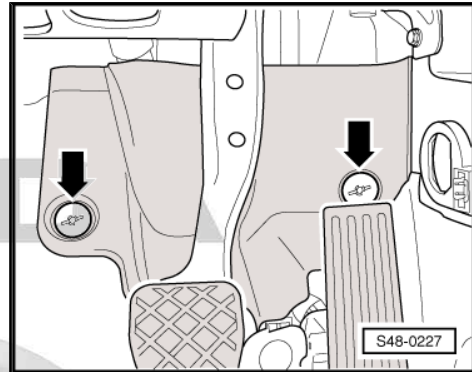
Removing

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .

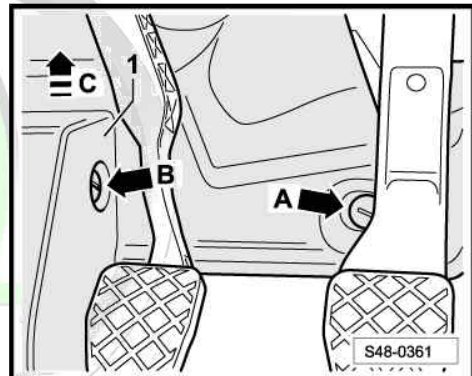
Left-hand drive

- Remove nuts -arrows- and remove the footwell trim.

Right-hand drive



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.



Continued for all vehicles



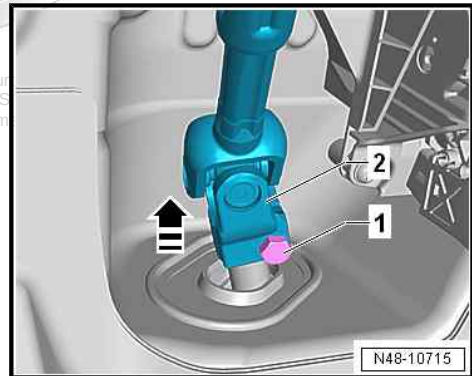
Caution

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If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.

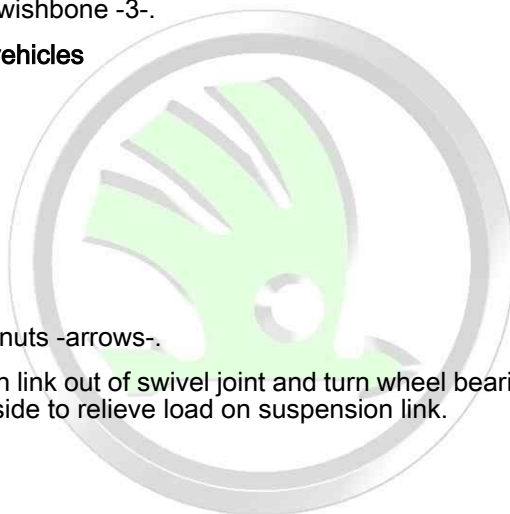


- Remove front left wheel.
- Dimension -a- Measure unladen weight of the vehicle
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) ,
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

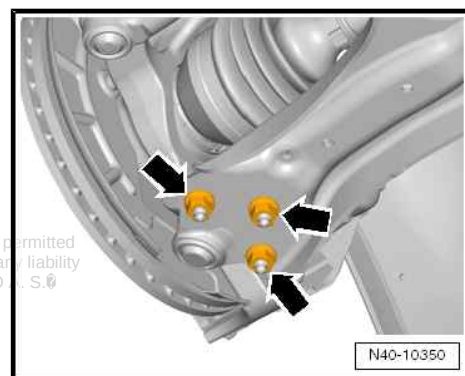
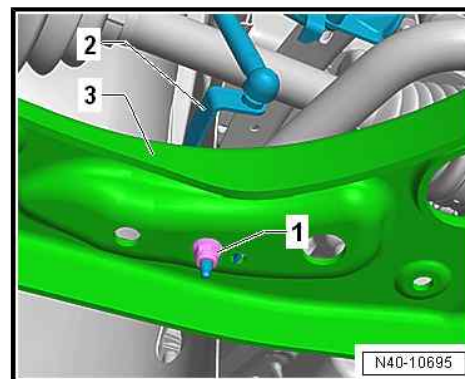
- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.

Continued for all vehicles

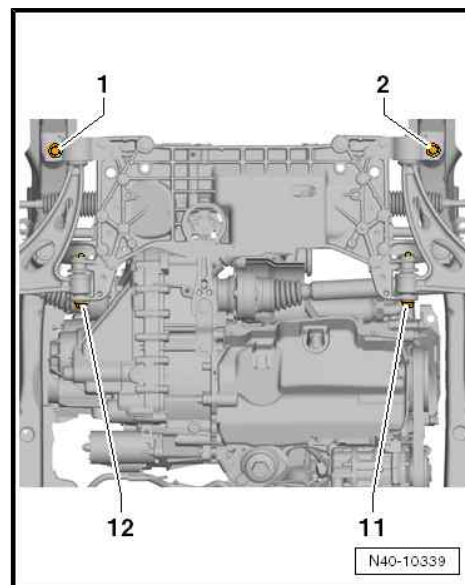


- Release fixing nuts -arrows-.
- Pull suspension link out of swivel joint and turn wheel bearing housing to outside to relieve load on suspension link.

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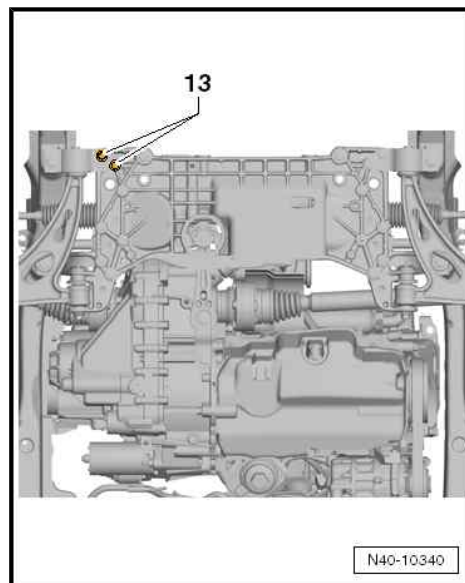


- Loosen screw -12- and leave temporarily screwed in.





- Loosen screws -13- and leave temporarily screwed in.
- Lower subframe by 3 cm. While doing so observe the electrical cables
⇒ "3.3 Lower the assembly carrier in the service position, assembly carrier made of sheet steel", page 66 .



- Remove screw -6- and -2-.
- Remove track control arm.

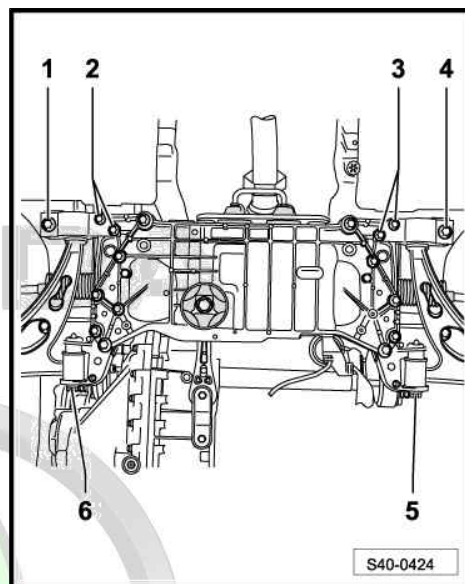
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ Make sure the boot is neither damaged nor twisted.
- ◆ Make sure all sealing surfaces are clean.
- ◆ It is necessary to perform an axle alignment in the event of:
⇒ "3.3 Axle alignment", page 309



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- Tighten screw -12- of track control arm to console (in the unladen weight position)
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#).
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#).*

Tightening torques - summaries of components



Note

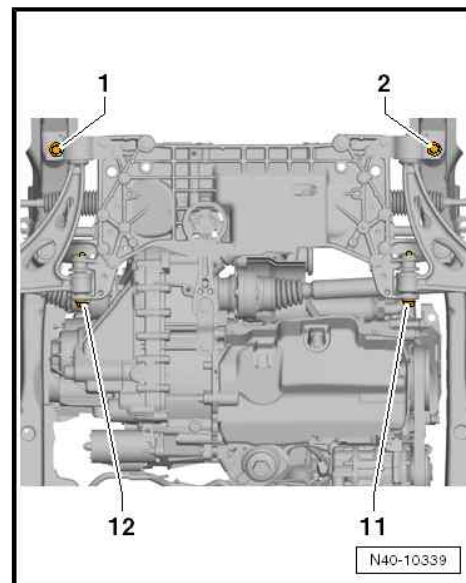
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["1.1 Summary of components - steering column", page 320](#)
- ◆ ⇒ ["1.1 Summary of components - vehicle level sender front", page 293](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50
- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26

2.10 Replacing rubber-metal bearing for track control arm, aluminium assembly carrier

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Pipe section - T10219/1-
- ◆ Mandrel - T10219/2-





Pulling out the rubber-metal bearing

- Press out rubber-metal bearing as shown.

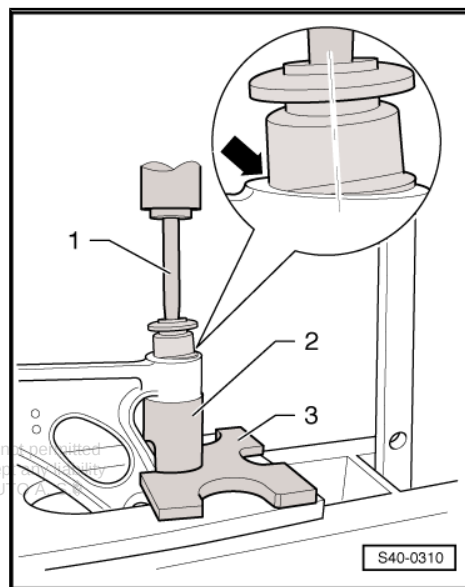
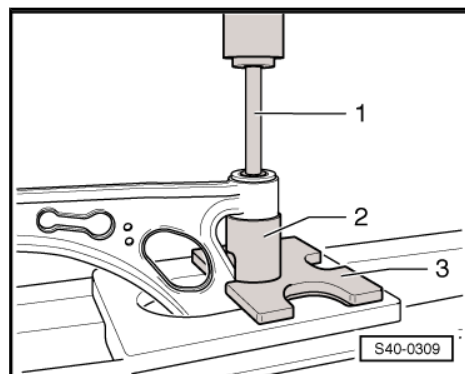
- 1 - Drive bushing - MP6-405 (VW 411)-
- 2 - Pipe section - T10219/1-
- 3 - Pressure plate - MP3-407 (VW 402)-

Inserting the rubber-metal bearing

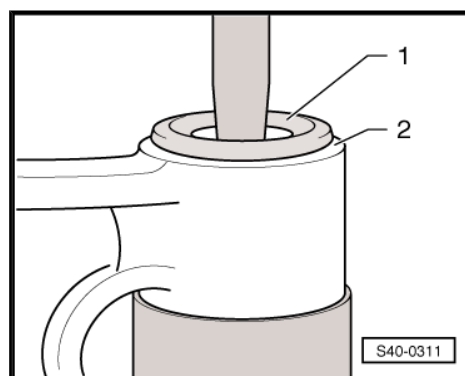
In order not to damage the rubber-metal bearing when inserting it, it must be positioned at an angle. During the press-in procedure the rubber-metal bearing straightens.

- Apply assembly sliding oil - G 294 421 A1- to the outside of the rubber-metal bearing.
- Position the rubber-metal bearing at an angle (in direction of track control arm), at the same time the lip -arrow- must slide into the hole (as shown in the figure).

- 1 - Drift - T10219/2-
- 2 - Pipe section - T10219/1-
- 3 - Pressure plate - MP3-407 (VW 402)-

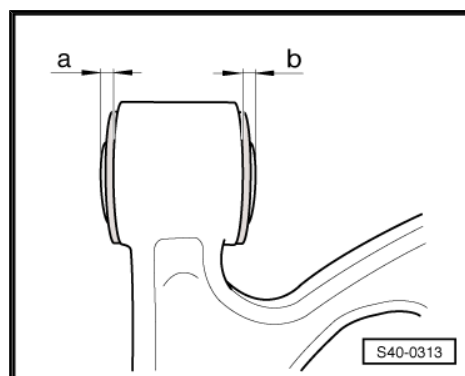


- Insert the core of the rubber-metal bearing -1- into the hole of the track control arm -2-.



Dimensions -a- and -b- must be identical.

If the dimensions -a- and -b- are not identical:

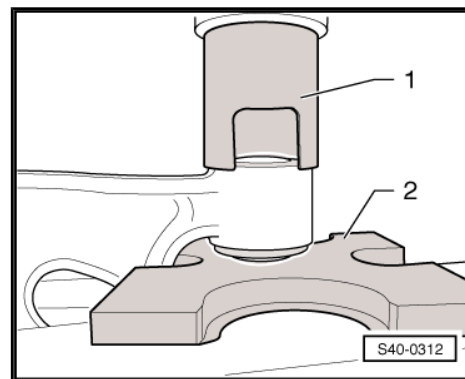


- Slightly pull back the bearing from the track control arm.
- 1 - Pipe section - T10219/1-
- 2 - Pressure plate - MP3-407 (VW 402)-
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ "3.3 Axle alignment", page 309 .*



2.11 Replacing bracket with bearing for track control arm - aluminium assembly carrier

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Guide piece - MP3-454 (VW 439)-
- ◆ Pipe section - MP3-409 (VW 418 A)-

Press off track control arm from bracket

Rubber-metal bearing only exists with the bracket as a spare part.

- Press off track control arm from rubber-metal bearing of bracket.



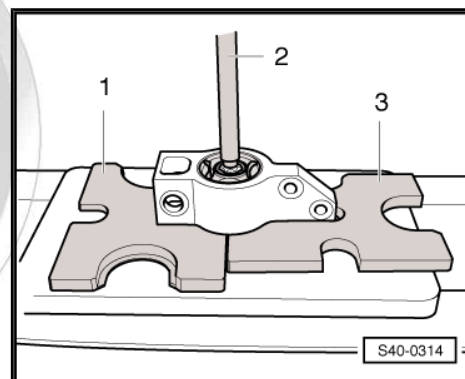
Note

During the press-out procedure, hold the track control arm.

- 1 - Pressure plate - MP3-406 (VW 401)-
- 2 - Guide piece - MP3-454 (VW 439)-
- 3 - Pressure plate - MP3-407 (VW 402)-

Press bracket with bearing onto track control arm

- Coat the track control arm hexagon with assembly sliding oil G 294 421 A1- (1:20 diluted).



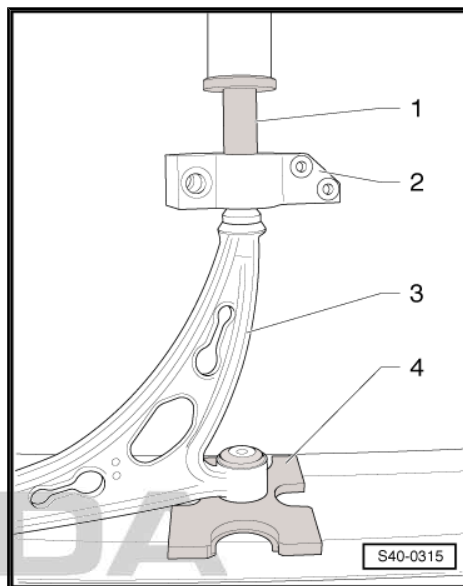


- Carefully press the bracket with rubber-metal bearing as far as the stop onto the track control arm.
- 1 - Pipe section - MP3-409 (VW 418 A)-
- 2 - Bracket with rubber-metal bearing
- 3 - Suspension link
- 4 - Pressure plate - MP3-406 (VW 401)-
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ "3.3 Axle alignment", page 309 .*

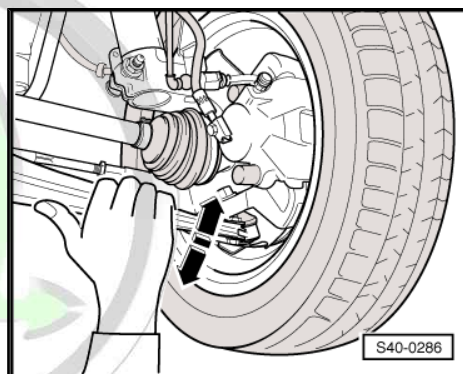


2.12 Inspecting the suspension link

Inspecting axial play

- Pull the track control arm down with force and push up again.

Inspecting radial play

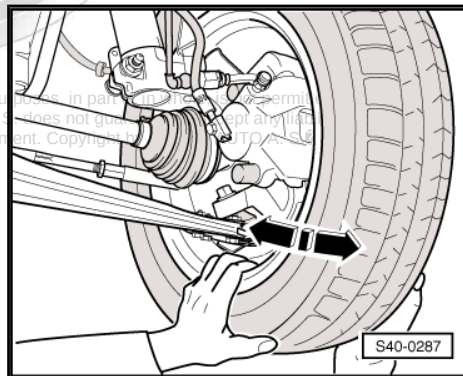


- Forcefully push the wheel at the bottom towards the inside and the outside.



Note

- ◆ For these two tests no "play" may be felt or be visible.
- ◆ Observe the suspension link during the tests.
- ◆ Take into account possible wheel bearing play or "play" in top suspension strut bearing.
- ◆ Inspect rubber bellows for damage, if necessary replace.



2.13 Removing and installing the suspension link

Special tools and workshop equipment required

- ◆ Ball joint extractor - 3287A-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”](#),
[page 158](#) .



Note

- ◆ *If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e the vehicle must not stand on its wheels.*
- ◆ *If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.*
- ◆ *If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.*

- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

- Unscrew nut -1-.
- Undo holder -2- from the front left vehicle level sensor - G78- and front right vehicle level sender - G289- from the suspension link -3-.

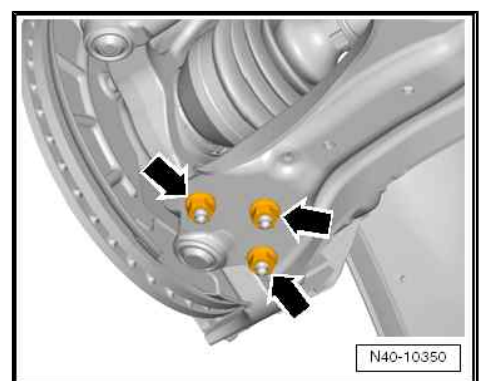
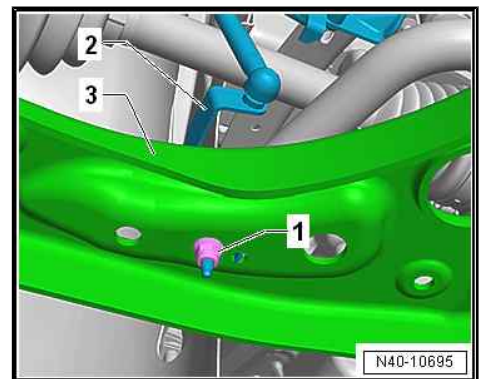
Continued for all vehicles

- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



Note

- ◆ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ◆ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor*
⇒ [“6.4.6 Push the cardan shaft out of the wheel hub.”](#),
[page 155](#) .
- Slacken the nut of the steering joint and partially unscrew.



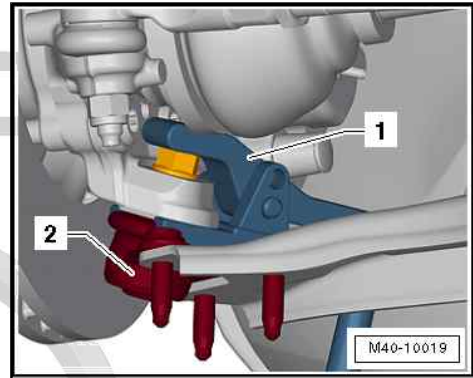


- Using the ball joint extractor - 3287A- -1-, press the steering joint -2- out from the wheel-bearing housing.



Note

- ♦ *Risk of accident while the steering joint is being pressed out; observe: the ball joint extractor - 3287A- can fall off when loosening the pivot pin, therefore place the engine/gearbox jack underneath, e.g. -V.A.G 1383A - or -VAS6931- with a wooden plate.*
- ♦ *To protect the thread, only partially unscrew the nut of the steering joint, in order to position the ball joint extractor - 3287A- .*



Installing

- Insert suspension link in the wheel-house bearing. Note in-
stallation position
⇒ [Fig. "Fitting position according to the identification -arrow-
on the suspension link" , page 13](#) .



Note

Make sure the steering joint boot is neither damaged nor twisted.

- Screw on and tighten new self locking nut of steering joint.

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Note

Use the Torx key to counterhold at the suspension.

- Insert drive shaft back into the wheel-bearing housing.

Installation is carried out in the reverse order. When installing, note the following:

- Tighten fixing screw of drive shaft to wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection",
page 158](#) .



Note

At the same time the vehicle must not be standing on its wheels, otherwise the wheel bearing will be damaged.

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe",
page 10](#)
- ♦ ⇒ ["1.1 Summary of components - vehicle level sender front",
page 293](#)

- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

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3 Front axle with assembly carrier made of steel sheet

⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)

⇒ [“3.2 Fixing the assembly carrier, assembly carrier made of steel sheet”, page 64](#)

⇒ [“3.3 Lower the assembly carrier in the service position, assembly carrier made of sheet steel”, page 66](#)

⇒ [“3.4 Removing and installing assembly carrier without steering gear, sheet steel assembly carrier”, page 70](#)

⇒ [“3.5 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier”, page 75](#)

⇒ [“3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier”, page 86](#)

⇒ [“3.7 Removing and installing the anti-roll bar, sheet steel assembly carrier”, page 90](#)

⇒ [“3.8 Removing and installing coupling rod from anti-roll bar, sheet steel assembly carrier”, page 93](#)

⇒ [“3.9 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)

⇒ [“3.10 Replacing rubber-metal bearing for track control arm, assembly carrier made of steel sheet”, page 101](#)

⇒ [“3.11 Inspecting the suspension link”, page 105](#)

⇒ [“3.12 Removing and installing the suspension link”, page 106](#)

3.1 Summary of components - assembly carrier, sheet steel assembly carrier

⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)

⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)

3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive



Note

- ◆ *Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.*
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

1 - Screw

- ☐ Tightening torque
⇒ ["2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier", page 359](#)

2 - Protection plate

3 - Power-steering gear

- ☐ Summary of components
⇒ ["2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier", page 359](#)

4 - Coupling rod

- ☐ connects anti-roll bar with suspension strut
- ☐ Removing and installing
⇒ ["3.8 Removing and installing coupling rod from anti-roll bar; sheet steel assembly carrier", page 93](#)

5 - Nut

- ☐ 65 Nm

6 - Nut

- ☐ Tightening torque
⇒ ["2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier", page 359](#)

7 - Nut

- ☐ always replace
- ☐ when loosening or tightening the screw ⇒ [Item 9 \(page 59\)](#) , counterhold with wrench
- ☐ 70 Nm + 180°

8 - Assembly carrier

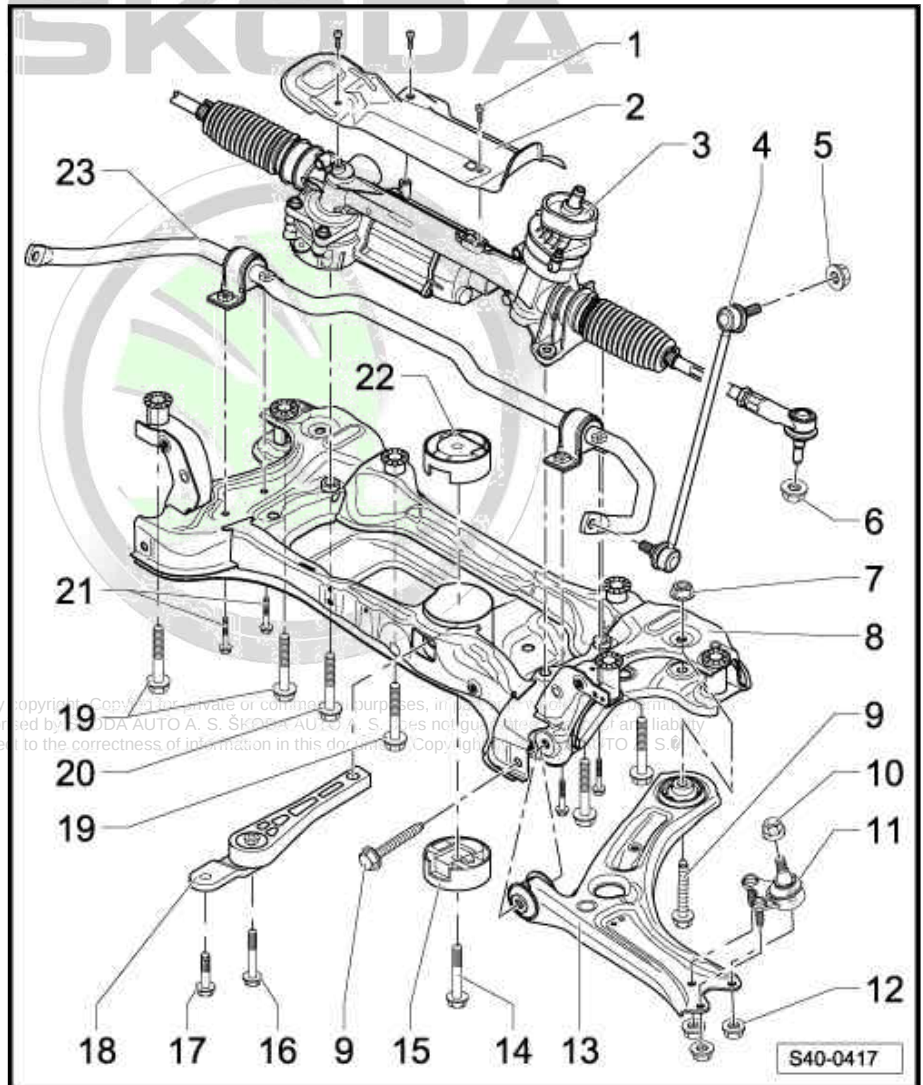
- ☐ Welded part made of steel sheet
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing without steering gear
⇒ ["3.4 Removing and installing assembly carrier without steering gear, sheet steel assembly carrier", page 70](#)
- ☐ Installing and removing with steering gear
⇒ ["3.5.1 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, left-hand drive", page 75](#)

9 - Screw

- ☐ always replace
- ☐ 70 Nm + 180°
- ☐ Counterhold nut ⇒ [Item 7 \(page 59\)](#) with wrench when loosening or tightening

10 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 60 Nm





11 - Steering joint

- ☐ Check ⇒ [“2.12 Inspecting the suspension link”, page 54](#)
- ☐ Removing and installing ⇒ [“2.13 Removing and installing the suspension link”, page 54](#)
- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ observe left/right version
⇒ [Fig. “Fitting position according to the identification -arrow- on the suspension link””, page 61](#)

12 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 100 Nm

13 - Suspension link

- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ Steel sheet version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

14 - Screw

- ☐ M14 x 1.5 x 70
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

15 - Bottom rubber-metal bearing for pendulum support

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Replace
⇒ [“3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier”, page 86](#)

16 - Screw

- ☐ M10 x 75
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

17 - Screw

- ☐ M10 x 35
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

18 - Pendulum support

- ☐ screw first to the gearbox then to the assembly carrier
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

19 - Screw

- ☐ always replace
- ☐ 90 Nm + 180°

20 - Screw

- ☐ replace after each removal
- ☐ Tightening torque
⇒ [“2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier”, page 359](#)

21 - Screw

- ☐ M8 x 75
- ☐ replace after each removal
- ☐ 20 Nm + 90°

22 - Top rubber-metal bearing for pendulum support

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

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- ❑ Replace
⇒ [“3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier”](#),
[page 86](#)

23 - Anti-roll bar

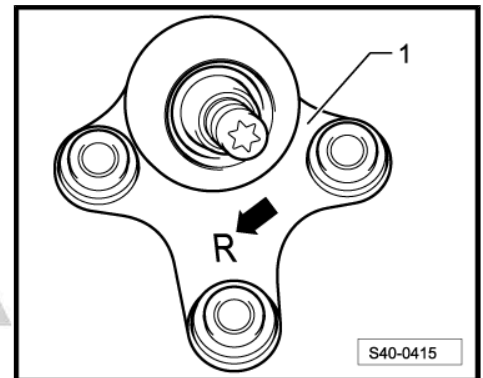
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing
⇒ [“3.7.1 Removing and installing the anti-roll bar, steel sheet assembly carrier, left-hand drive”](#),
[page 90](#)

Fitting position according to the identification -arrow- on the suspension link

R - means right

L - means left

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3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive



Note

- ◆ *Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.*
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

1 - Screw

- Tightening torque
⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)

2 - Protection plate

3 - Power-steering gear

- Summary of components
⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)

4 - Coupling rod

- connects anti-roll bar with suspension strut
- Removing and installing
⇒ ["3.8 Removing and installing coupling rod from anti-roll bar, sheet steel assembly carrier", page 93](#)

5 - Nut

- replace after each removal
- 65 Nm

6 - Nut

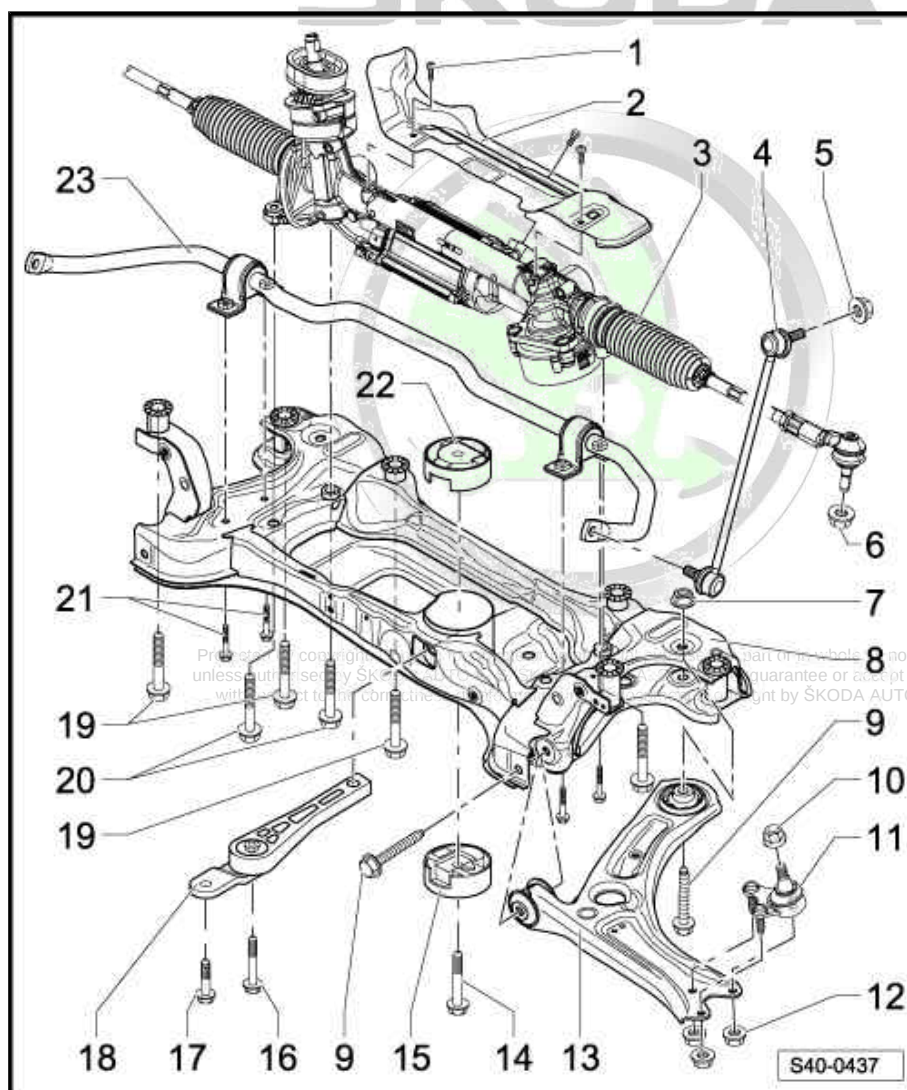
- always replace
- Tightening torque
⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)

7 - Nut

- always replace
- when loosening or tightening the screw ⇒ [Item 9 \(page 63\)](#) , counterhold with wrench
- 70 Nm + 180°

8 - Assembly carrier

- Welded part made of steel sheet
- Assignment ⇒ Electronic Catalogue of Original Parts





- ☐ Removing and installing without steering gear
⇒ [“3.4 Removing and installing assembly carrier without steering gear, sheet steel assembly carrier”, page 70](#)
- ☐ Installing and removing with steering gear
⇒ [“3.5.2 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, right-hand drive”, page 81](#)

9 - Screw

- ☐ always replace
- ☐ Counterhold nut ⇒ [Item 7 \(page 62\)](#) with wrench when loosening or tightening
- ☐ 70 Nm + 180°

10 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 60 Nm

11 - Steering joint

- ☐ Check ⇒ [“2.12 Inspecting the suspension link”, page 54](#)
- ☐ Removing and installing ⇒ [“2.13 Removing and installing the suspension link”, page 54](#)
- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ observe left/right version
⇒ [Fig. “Fitting position according to the identification -arrow- on the suspension link””, page 13](#)

12 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 100 Nm

13 - Suspension link

- ☐ also replace the axle link in the event of damage of the steering joint
- ☐ Steel sheet version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)
- ☐ Removing and installing left track control arm with bracket, vehicles with an automatic gearbox
⇒ [“3.9.2 Removing and installing left track control arm, sheet steel assembly carrier vehicles with an automatic gearbox”, page 96](#)

14 - Screw

- ☐ M14 x 1.5 x 70
- ☐ first tighten when the pendulum support is screwed to the gearbox
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

15 - Bottom rubber-metal bearing for pendulum support

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Replace
⇒ [“3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier”, page 86](#)

16 - Screw

- ☐ M10 x 75
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10

17 - Screw

- ☐ M10 x 35
- ☐ replace after each removal
- ☐ Tightening torque ⇒ Engine; Rep. gr. 10



18 - Pendulum support

- ☐ screw first to the gearbox then to the assembly carrier
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

19 - Screw

- ☐ replace after each removal
- ☐ 90 Nm + 180°

20 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)

21 - Screw

- ☐ M8 x 75
- ☐ replace after each removal
- ☐ 20 Nm + 90°

22 - Top rubber-metal bearing for pendulum support

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Replace
⇒ ["3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier", page 86](#)

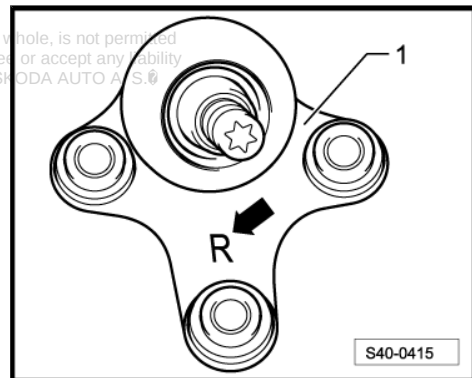
23 - Anti-roll bar

- ☐ different versions
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ ["3.7.2 Removing and installing the anti-roll bar, steel sheet assembly carrier, right-hand drive", page 92](#)

Fitting position according to the identification -arrow- on the suspension link

R - means right

L - means left



3.2 Fixing the assembly carrier, assembly carrier made of steel sheet

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Fixing

In order to fix the assembly carrier, the fixing devices must be successively screwed into the following positions:

Fixing devices - T10096- (smaller diameter) in positions -2-

Fixing devices - T10452- (larger diameter) in positions -3-

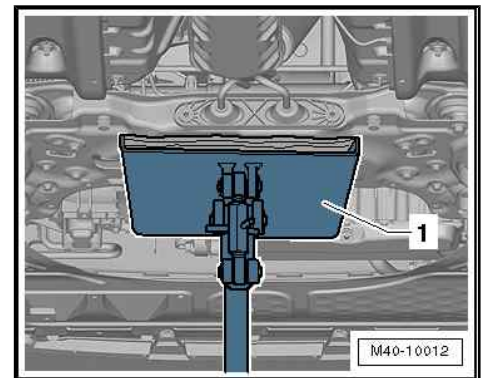
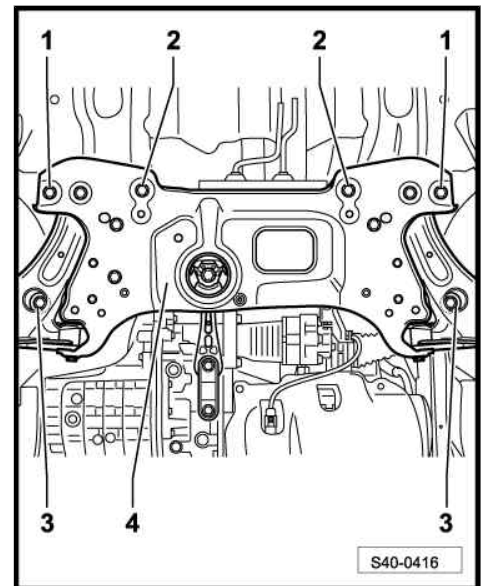


Note

The locating pin - T10096- and - T10452- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Successively screw out the fixing screws of the assembly carrier/body -2- and replace on both sides with the fixing devices - T10096- (smaller diameter) and tighten to 20 Nm.

- Support the assembly carrier with engine/gearbox jack e.g. - V.A.G 1383A- or -VAS6931- -1-.



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- Successively screw out the fixing screws of the assembly carrier/body -3- and replace on both sides with the fixing devices - T10452- (larger diameter) and tighten to 20 Nm.

The position of the front axle is now fixed.

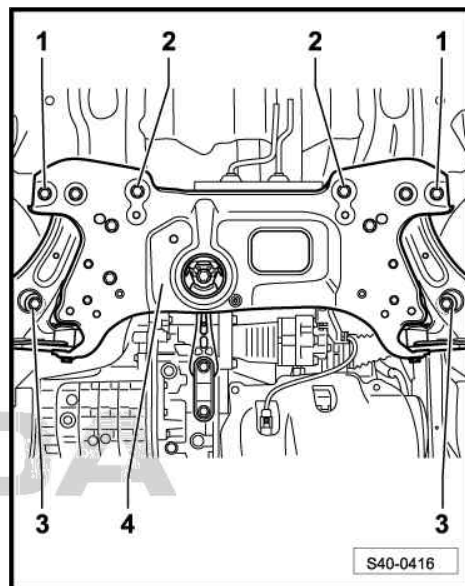
If it is not possible to insert the fixing devices - T10096- or - T10452- into the corresponding openings of the assembly carrier, the following measures must be carried out:

- Prepare the inlet openings in the lower area of the assembly carrier e.g. with a file so that the fixing devices - T10096- or - T10452- can be inserted into the openings.
- Treat prepared openings to protect against corrosion, e.g. with zinc spray - D 007 500 04- .

Installing

Installation is carried out in the reverse order.

- Successively replace the fixing devices - T10096- and - T10452- with new screws.
- Tighten screws to corresponding tightening torque.



Note

It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components

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Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

3.3 Lower the assembly carrier in the service position, assembly carrier made of sheet steel

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Lower

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .

Left-hand drive

- Remove nuts -arrows- and remove the footwell trim.

Right-hand drive

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- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.

Continued for all vehicles

- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.



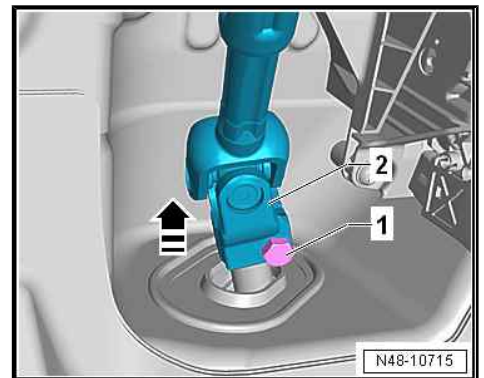
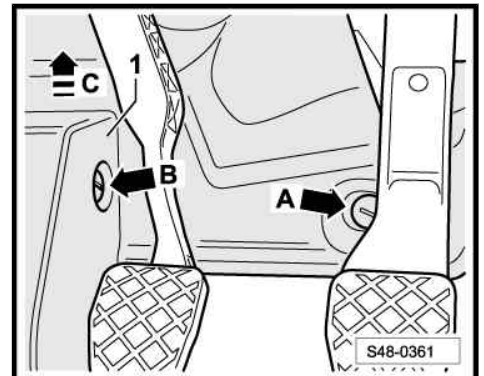
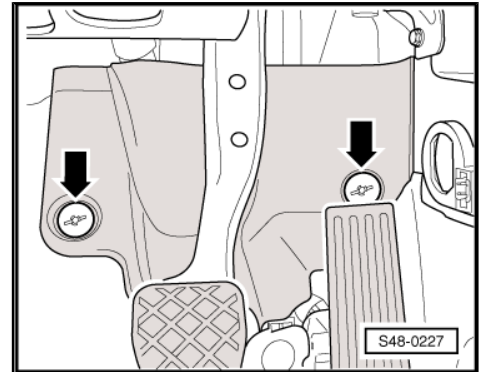
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If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.



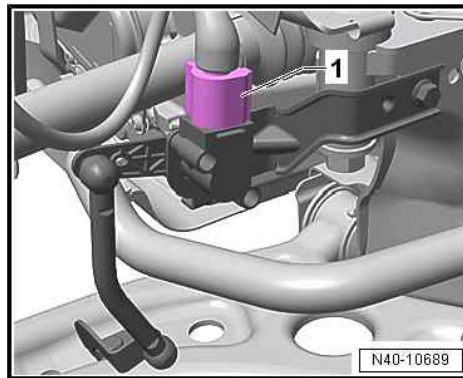
- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

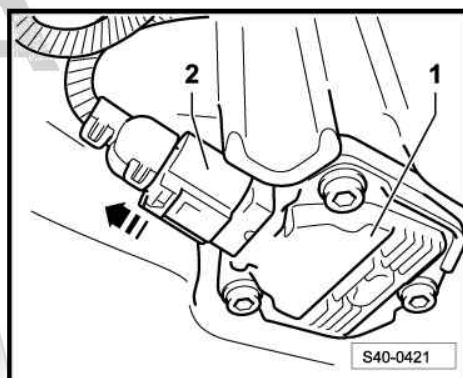


- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

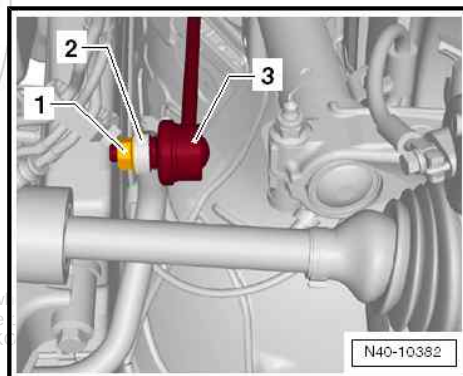
Continued for all vehicles



- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.

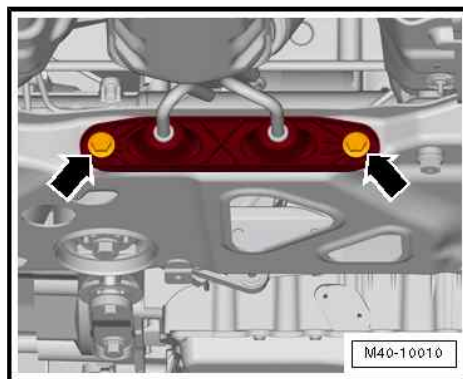


- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

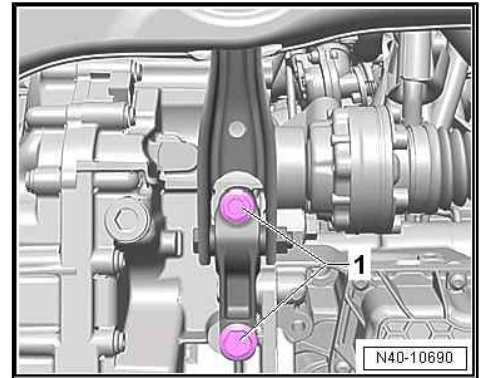


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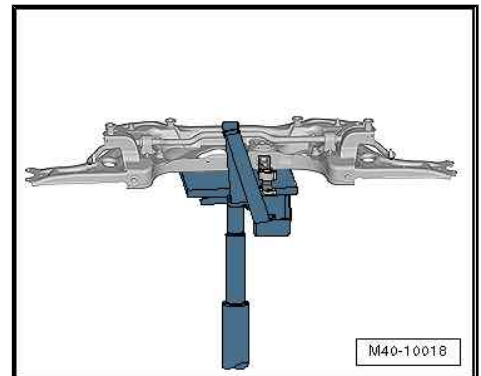
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



- Unscrew screws -1- of pendulum support.
- Fix the assembly carrier
⇒ “3.2 Fixing the assembly carrier, assembly carrier made of steel sheet”, page 64 .

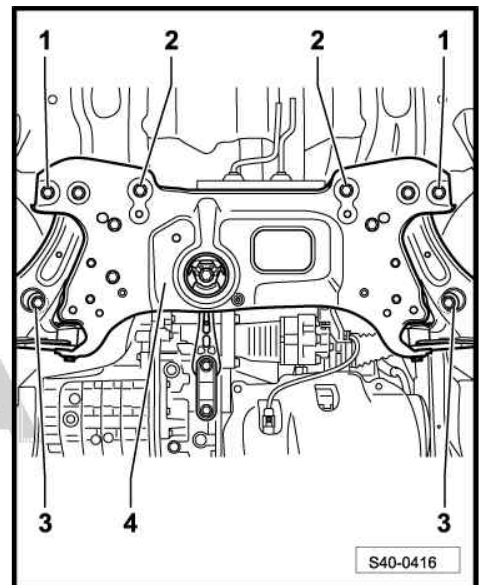


- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



- Unscrew the screws -1- and lower the assembly carrier by max. 7 cm. While doing so observe the electrical cables.

Lower the assembly carrier by max. 11 cm.



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- Detach the screw -1- for the cable duct -2- from the assembly carrier.
- Lower the assembly carrier by approx. 11 cm. While doing so observe the electrical cables.

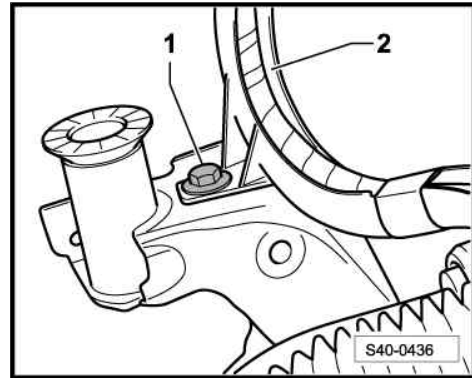
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ♦ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ♦ Make sure the boot is neither damaged nor twisted.
- ♦ Make sure all sealing surfaces are clean.
- ♦ It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)
- ♦ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ♦ ⇒ [“1.1 Summary of components - steering column”, page 320](#)

- ♦ Pendulum support to gearbox ⇒ Engine; Rep. gr. 10
- ♦ Exhaust System ⇒ Engine; Rep. gr. 26
- ♦ Noise insulation ⇒ Body work assembly; Rep. gr. 50

3.4 Removing and installing assembly carrier without steering gear, sheet steel assembly carrier

Special tools and workshop equipment required

- ♦ Fixing device - T10096- (smaller diameter)
- ♦ Fixing device - T10452- (larger diameter)

- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

Removing

- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

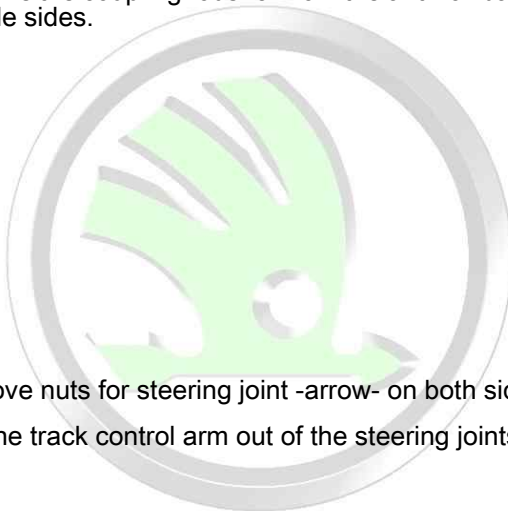
Vehicles with vehicle level sender

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

Continued for all vehicles

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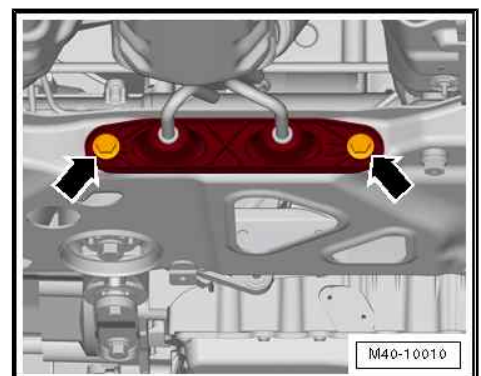
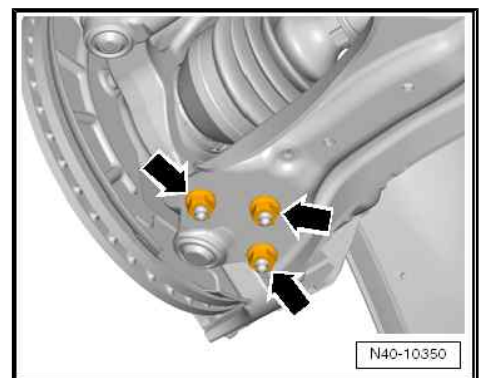
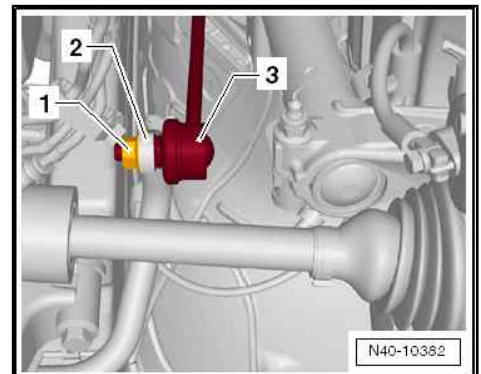
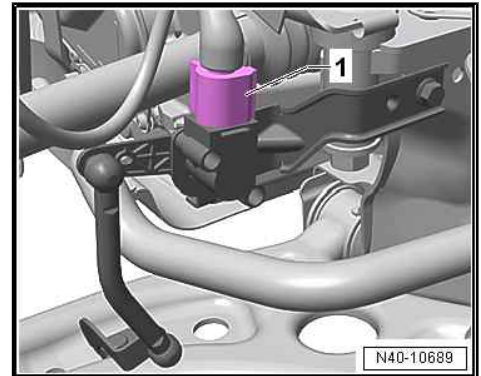
- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.



- Remove nuts for steering joint -arrow- on both sides.
- Pull the track control arm out of the steering joints.

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- Unbolt bracket for exhaust system -arrows- from assembly carrier.



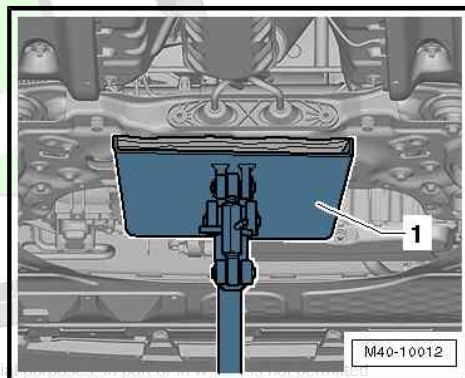
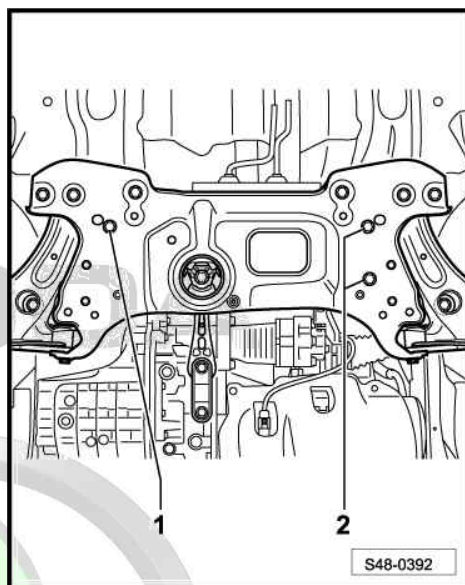
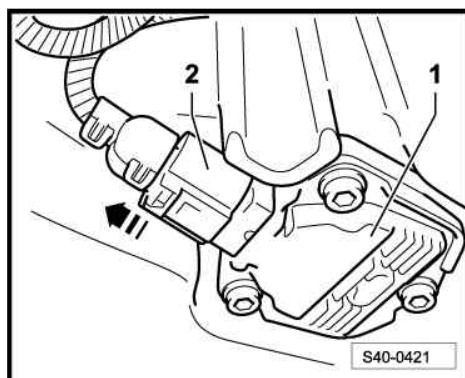
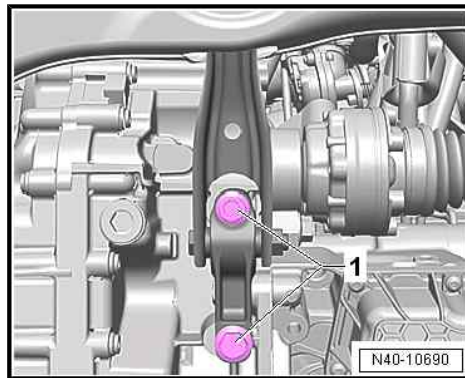


- Unscrew screws -1- of pendulum support.

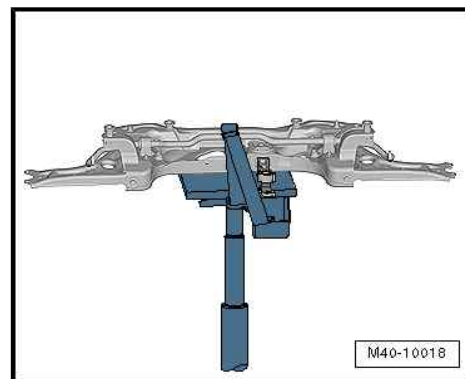
- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.

- Remove screws for steering gear -1- and -2- from assembly carrier.
- Carefully lever off the steering gear from the assembly carrier.
- Tie up the power-steering gear e.g with wire (attach), so that it maintains its position.

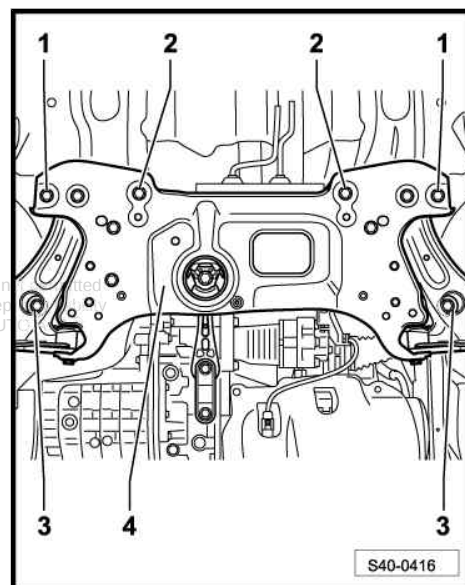
- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.
- Fix the assembly carrier
⇒ "3.2 Fixing the assembly carrier, assembly carrier made of steel sheet", page 64 .



- Secure assembly carrier on engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



- Unscrew the screws -1- and lower the assembly carrier by max. 11 cm. While doing so observe the electrical cables.



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- Detach the screw -1- for the cable duct -2- from the assembly carrier.
- Slacken the wiring harness for oil level and oil temperature sender - G266- (if present).
- Lower the assembly carrier with engine/gearbox jack e. g. - V.A.G 1383A- or -VAS6931- .

Installing

Installation is carried out in the reverse order; pay attention to the following points:



Note

It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

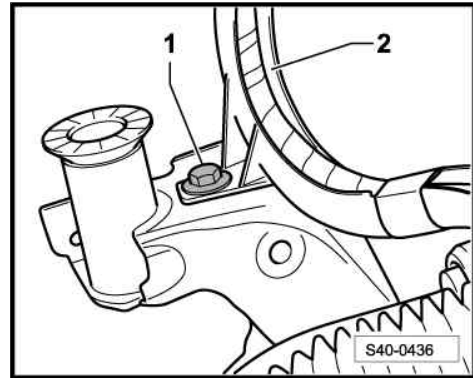
Tightening torques - summaries of components



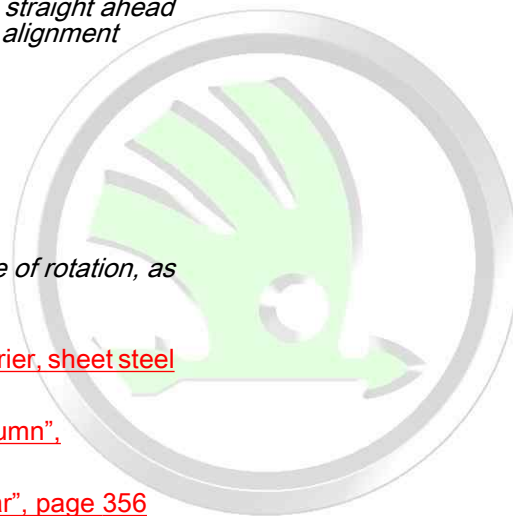
Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support to gearbox ⇒ Engine; Rep. gr. 10
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50



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3.5 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier

⇒ [“3.5.1 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, left-hand drive”, page 75](#)

⇒ [“3.5.2 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, right-hand drive”, page 81](#)

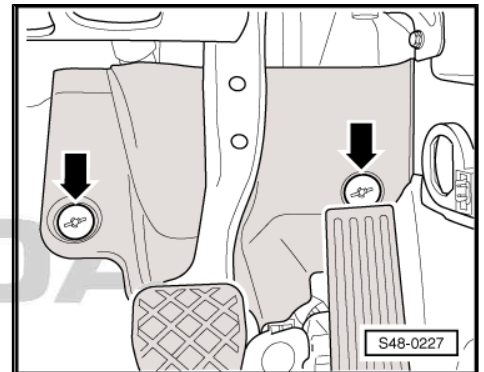
3.5.1 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, left-hand drive

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

Removing

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove nuts -arrows- and remove the footwell trim.





- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.

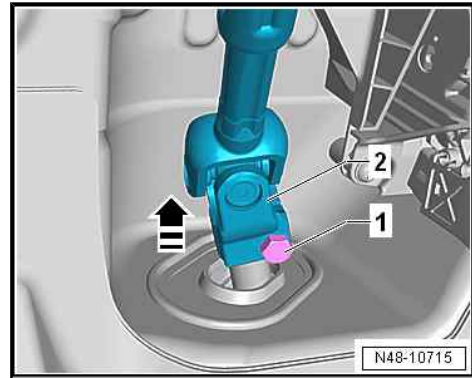


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

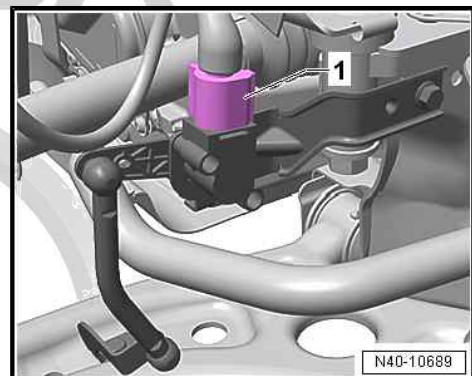
You must observe these points because if you do not, irreparable damage may result.



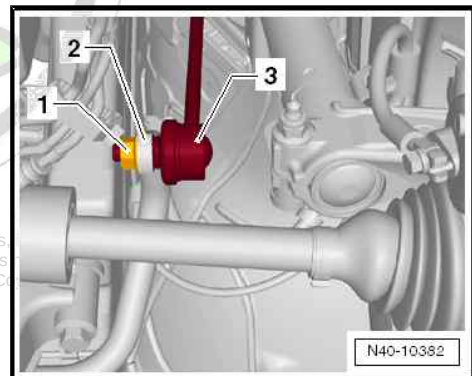
- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .



- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

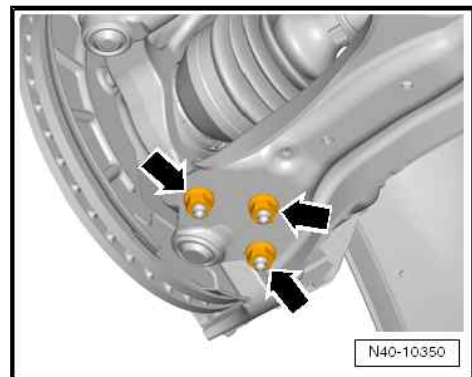


- Remove nuts for steering joint -arrow- on both sides.
- Pull the track control arm out of the steering joints.
- Loosen nut of track rod end on both sides, but do not unscrew yet.

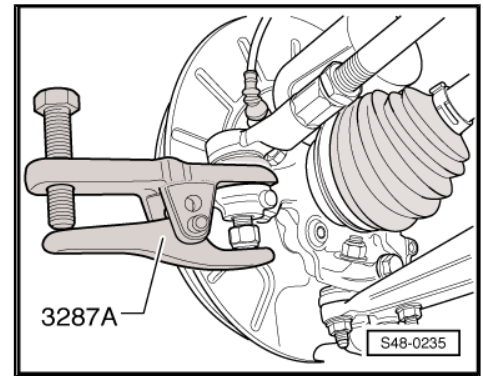


Note

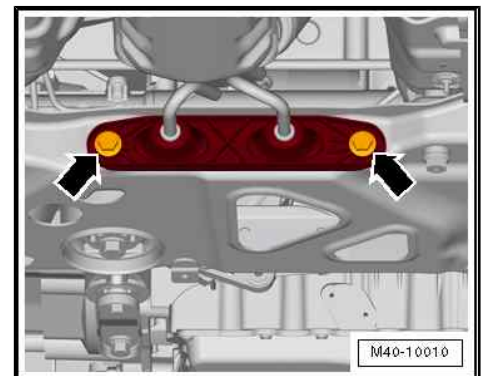
To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.



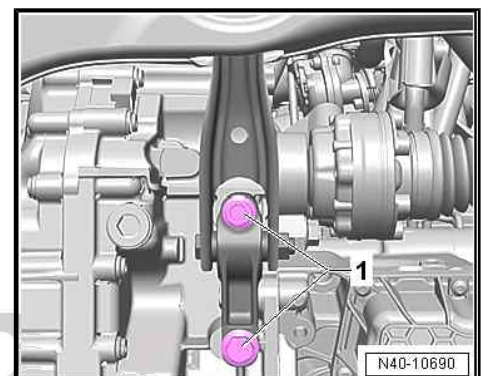
- Remove the steering joint/track rod from the wheel-bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod on both sides.



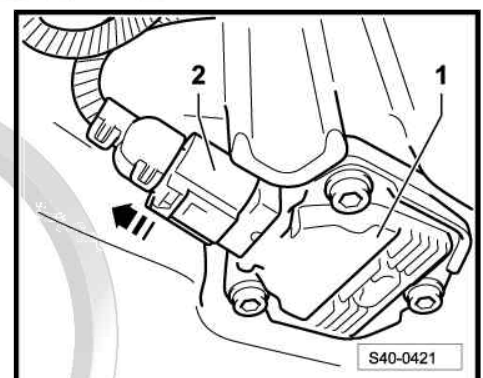
- Unbolt bracket for exhaust system -arrows- from assembly carrier.



- Unscrew screws -1- of pendulum support.

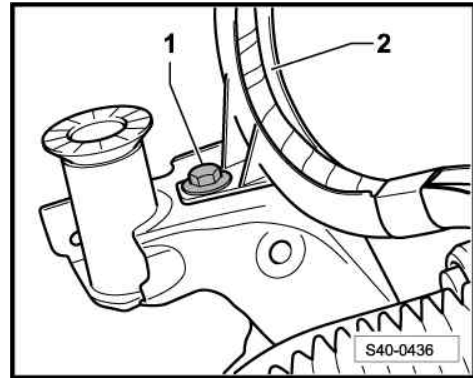


- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.

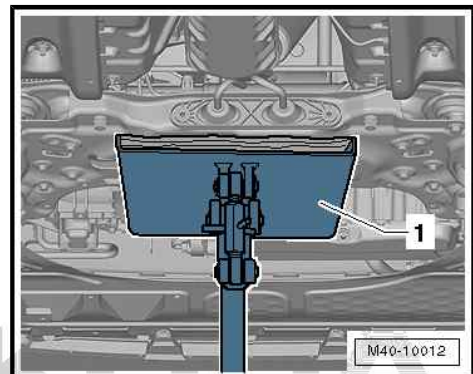




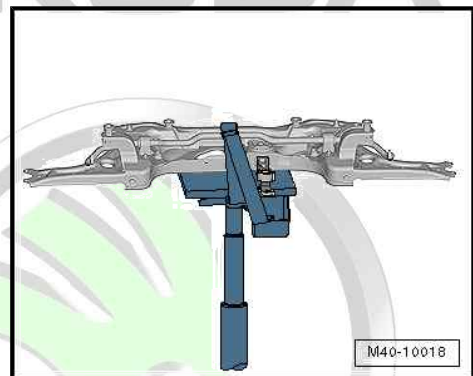
- Release the screw -1- for the cable duct -2- from the assembly carrier.



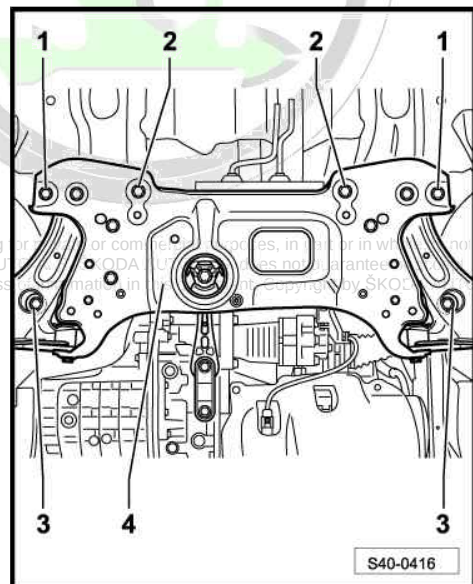
- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- -1- underneath the assembly carrier.
- Fix the assembly carrier
⇒ "3.2 Fixing the assembly carrier, assembly carrier made of steel sheet", page 64 .



- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.

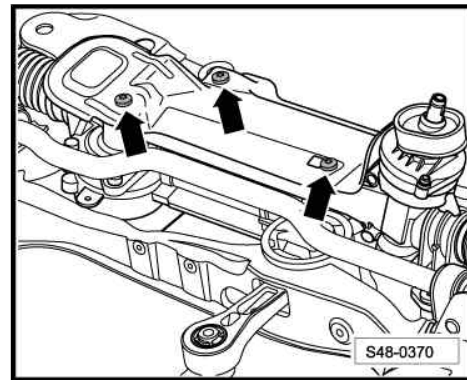


- Unscrew the screws -1- and lower the assembly carrier by max. 11 cm. While doing so observe the electrical cables.



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- Remove heat shield -arrows- for steering gear.
- Unclip all the cable attachment points at the steering gear.



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- Disconnect the plug connections -1- and -2- from the steering gear.

When doing this, it is necessary to:

- Pull out the fuse of the plug connection in -direction of arrow- -A-.
- Press together the catch of the plug connection in -direction of arrow- -B- and separate the plug connection by pulling.
- Slacken the wiring harness for oil level and oil temperature sender - G266- (if present).
- Lower assembly carrier.

Installing

Installation is performed in the reverse order, pay attention to the following points:



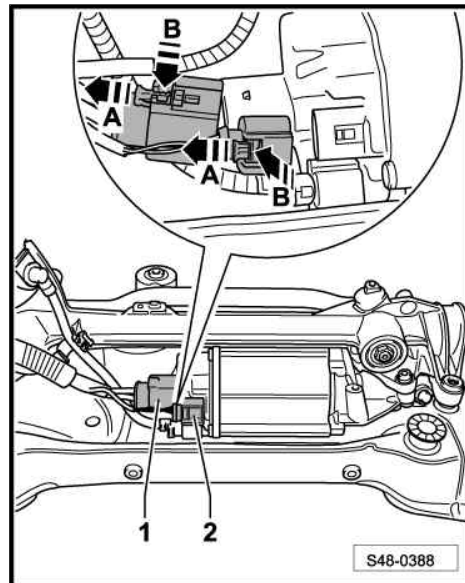
Note

- ◆ *Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.*
- ◆ *Make sure the boot is neither damaged nor twisted.*
- ◆ *Make sure all sealing surfaces are clean.*
- ◆ *It is necessary to perform an axle alignment in the event of:*
⇒ [“3.3 Axle alignment”, page 309](#)
- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support to gearbox ⇒ Engine; Rep. gr. 10
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26

◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

3.5.2 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, right-hand drive

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Ball joint extractor - 3287A-

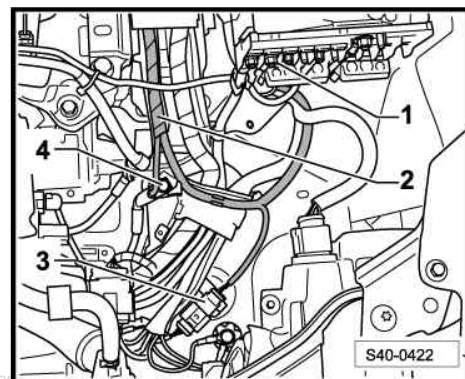
Removing



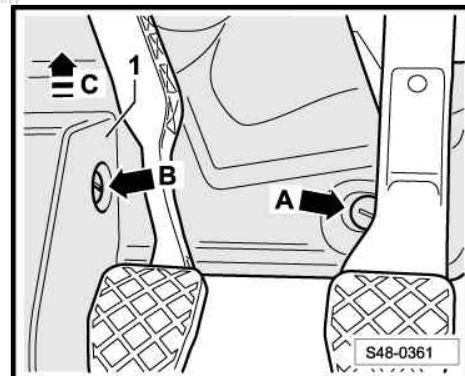
Note

On right-hand drive vehicles, the wiring harness is removed from the engine compartment at the same time when removing the assembly carrier.

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .
- Remove air filter and air guide with air mass meter ⇒ Engine; Rep. gr. 23 or ⇒ Engine; Rep. gr. 24 .
- Disconnect cable -1- from the E-box.
- Disconnect plug -3- for oil level and oil temperature sender - G266- , if present.
- Disconnect earth line -4-.
- Unclip wiring harness -2-.



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- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
 - Unclip footwell panelling in -arrow direction C-.





- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.

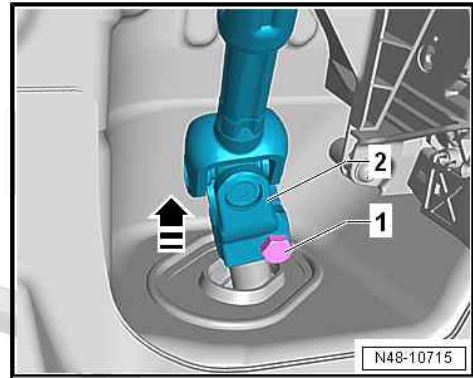


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.



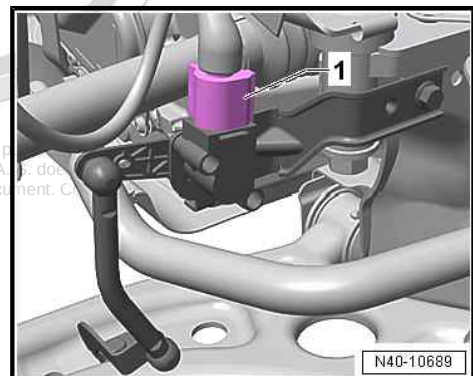
- Remove wheels at the front.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

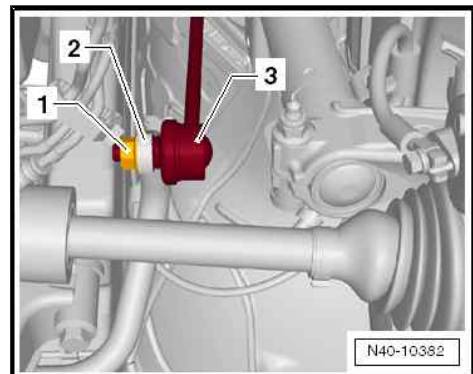
- Disconnect the connector -1- on the front left vehicle level sensor - G78- .

Continued for all vehicles

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- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.

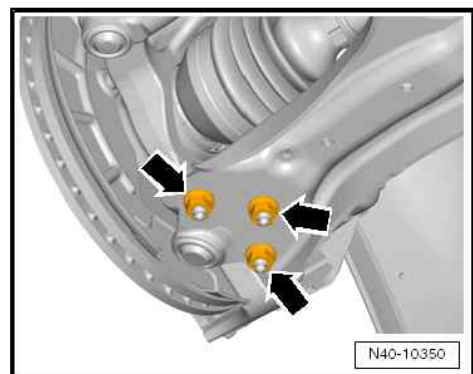


- Remove nuts for steering joint -arrow- on both sides.
- Pull the track control arm out of the steering joints.
- Loosen nut of track rod end on both sides, but do not unscrew yet.

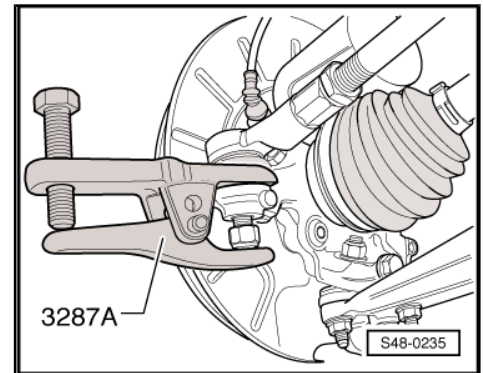


Note

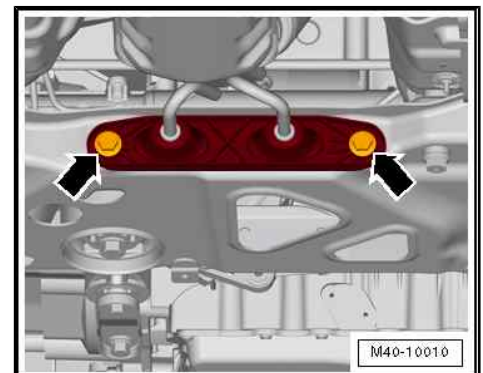
To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.



- Remove the steering joint/track rod from the wheel-bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod.

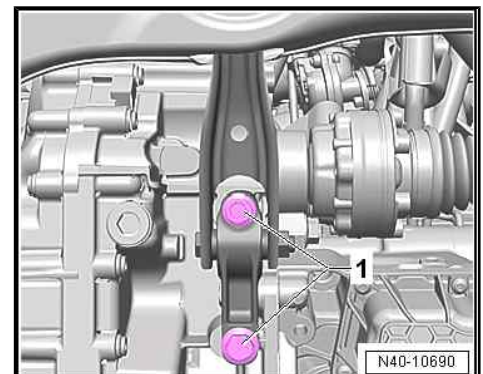


- Unbolt bracket for exhaust system -arrows- from assembly carrier.

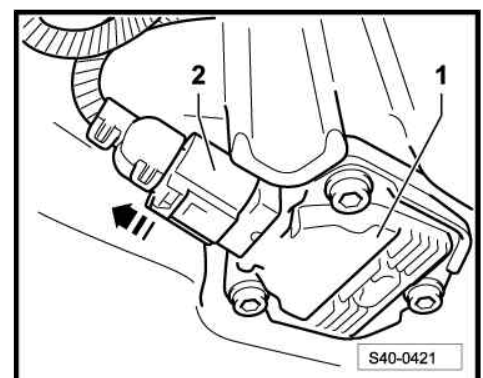


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- Unscrew screws -1- of pendulum support.

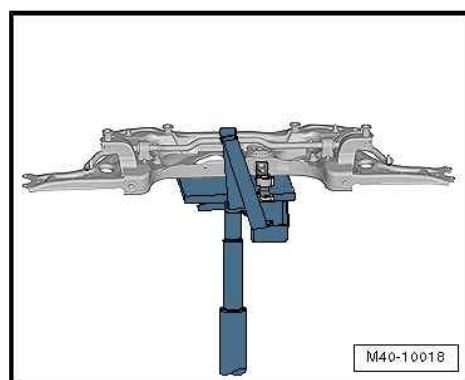
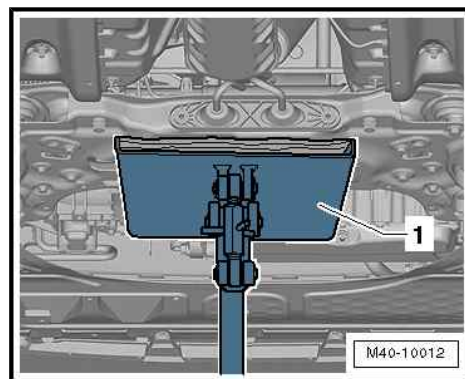


- Disconnect plug -2- for oil level and oil temperature sender - G266- -1-, if present.





- Place the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- underneath the assembly carrier.
- Fix the assembly carrier
⇒ “3.2 Fixing the assembly carrier, assembly carrier made of steel sheet”, page 64 .
- Secure assembly carrier to engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with corresponding strap.



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- Unscrew screws -1- and lower the assembly carrier. While doing so, pay attention to the electrical cables which must be removed together with the assembly carrier.

Installing

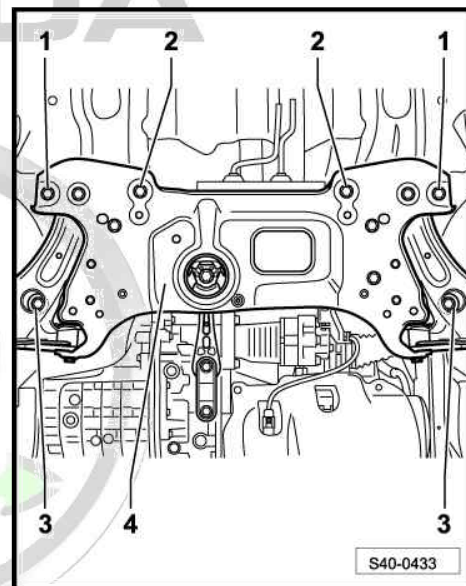
Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ Make sure the boot is neither damaged nor twisted.
- ◆ Make sure all sealing surfaces are clean.
- ◆ It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



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Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Pendulum support to gearbox ⇒ Engine; Rep. gr. 10
- ◆ Exhaust System ⇒ Engine; Rep. gr. 26
- ◆ Battery and battery tray ⇒ Electrical system; Rep. gr. 27 .
- ◆ Air filter and air guide with air mass meter ⇒ Engine; Rep. gr. 23 or ⇒ Engine; Rep. gr. 24 .
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

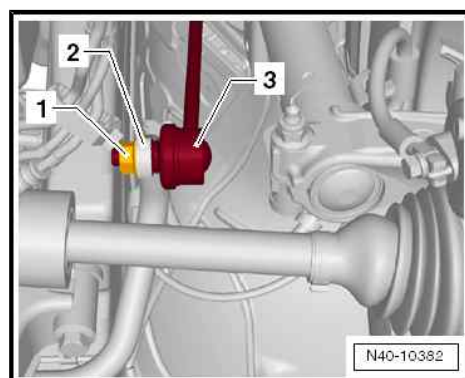
3.6 Replacing rubber-metal bearing for track pendulum support, sheet steel assembly carrier

Special tools and workshop equipment required

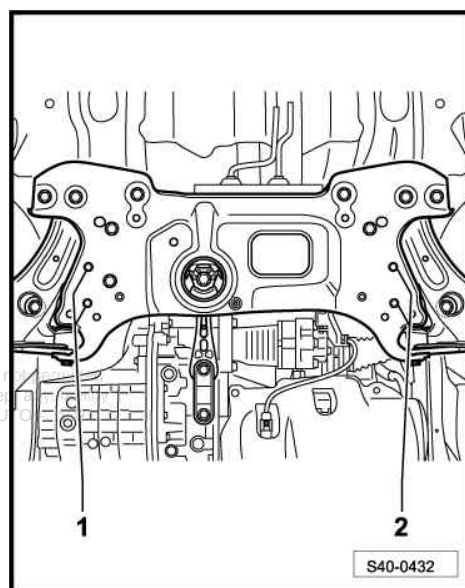
- ◆ Hydraulic cylinder - VAS 6178-
- ◆ Foot pump - VAS 6179-
- ◆ Assembly device - VAS 6779- or -VAS 6779A-
- ◆ Pressure spindle - MP3-408 (VW 412)-
- ◆ Pressure plate - MP3-406 (VW 401)-

Replacing rubber-metal bearing for pendulum support.

- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Remove the coupling rods -3- from the anti-roll bar -2- on both vehicle sides.



- Remove screws -1- and -2- for anti-roll clamps.
- Leave the anti-roll bar in the installation position.
- Remove pendulum support ⇒ Engine; Rep. gr. 10 .

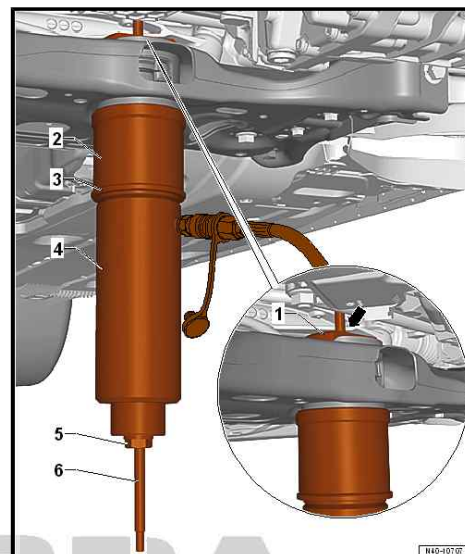


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- Fit Assembly device - VAS 6779- or -VAS 6779A- to the assembly carrier as shown in the figure.

- Place the pressure piece - VAS 6779/1- -1- onto the rubber-metal bearing with the flat side -arrow- in the driving direction.

- 1 - Thrust piece - VAS 6779/1-
- 2 - Knock-in bushing - VAS 6779/4-
- 3 - Thrust piece - VAS 6779/5-
- 4 - Hydraulic cylinder - VAS 6178-
- 5 - Hexagon nut - VAS 6779/3-
- 6 - Threaded rod - VAS 6779/2-



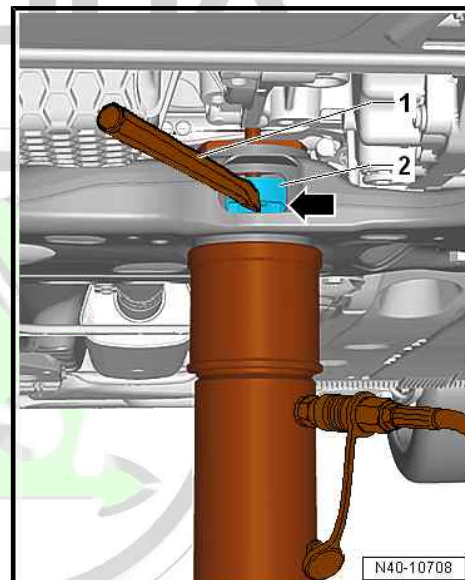
- Press in both bonded rubber bushes far enough for the top bonded rubber bushing -2- in the opening for pendulum support in the assembly carrier -arrow- is visible.
- Carry out a visual inspection of the rubber-metal bearing -2-.
 - if the upper part is deformed, it must be disrupted through the opening in the assembly carrier -arrow-.
- Push through the outer ring for the top part of the rubber-metal bearing -2- e.g. using a cold chisel -1-.



Note

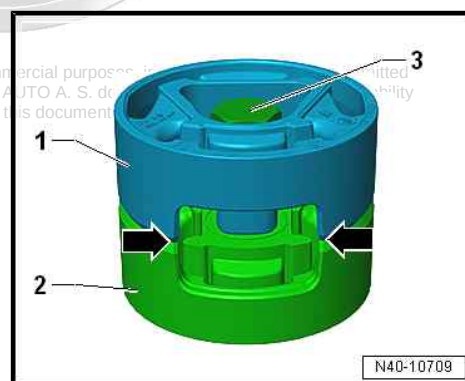
Pushing through the deformed bearing prevents tilting in the assembly carrier during removal.

- Remove both parts of the rubber-metal bearing at the same time.



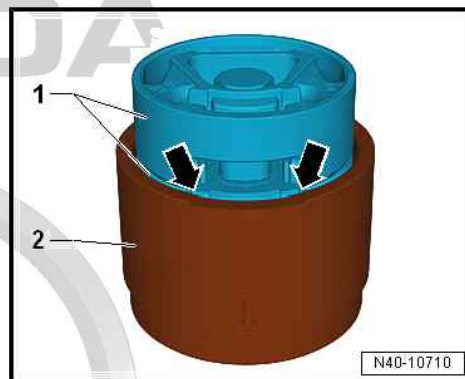
Prepare the rubber-metal bearing for pressing in

- Place the top part -1- and bottom part -2- on top of each other so that the edges of the opening -arrows- fit together precisely.
- Screw both parts together with the original screw -3- (hand-tight); the cutouts -arrows- must face each other exactly, the screw head points upwards.





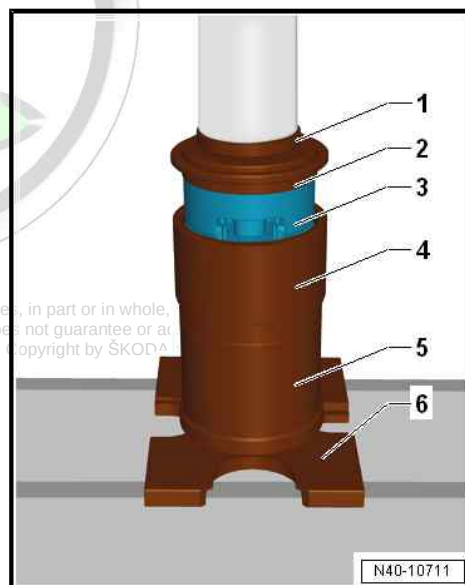
- Place the rubber metal bearing on larger diameter side in the cone - VAS 6779/6- -2-.
- Align the rubber metal bearing -1- in the cone - VAS 6779/6- , the edges of the opening must lie flush opposite the recess in the cone - VAS 6779/6- -arrows-.



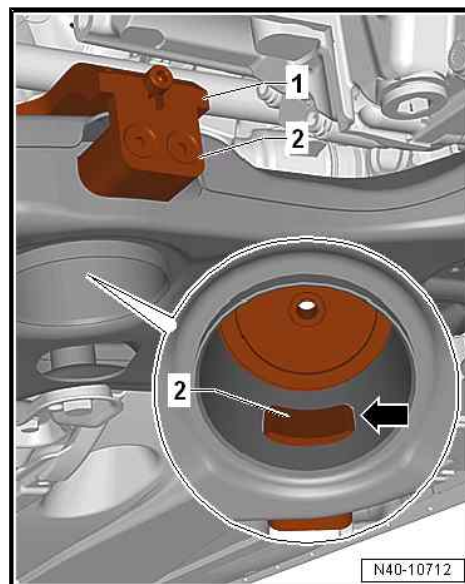
- Retract the rubber metal bearing -3- up to the stop in the cone - VAS 6779/6- as shown.

- 1 - Pressure spindle - MP3-408 (VW 412)-
- 2 - Thrust element - VAS 6779/5- , side with marking »A« must face upwards
- 3 - Rubber-metal bearing
- 4 - Cone - VAS 6779/6-
- 5 - Knock-in bushing - VAS 6779/4-
- 6 - Pressure plate - MP3-406 (VW 401)-

- Remove screw from rubber metal bearing.



- Fit counterholder - VAS 6779/7- -1- to assembly carrier.
- Insert the socket insert - VAS 6779/7-1A- into the opening for the pendulum support in the assembly carrier.
- Screw plug insert - VAS 6779/7-1A- onto counterholder - VAS 6779/7- .
- Make sure that the socket insert - VAS 6779/7-1A- is positioned exactly in the opening for the pendulum support in the assembly carrier.



Inserting the rubber-metal bearing

- Screw the threaded rod - VAS 6779/2- -7- into the counterholder - VAS 6779/7- -1-.
- Screw assembly device - VAS 6779- or -VAS 6779A- together as shown.

1 - Counterholder - VAS 6779/7-

2 - Cone - VAS 6779/6-

- ❑ The marking -arrow- on the pipe must point exactly to the centre between the screws on the counterholder - VAS 6779/7- -arrow-

3 - Thrust piece - VAS 6779/9-

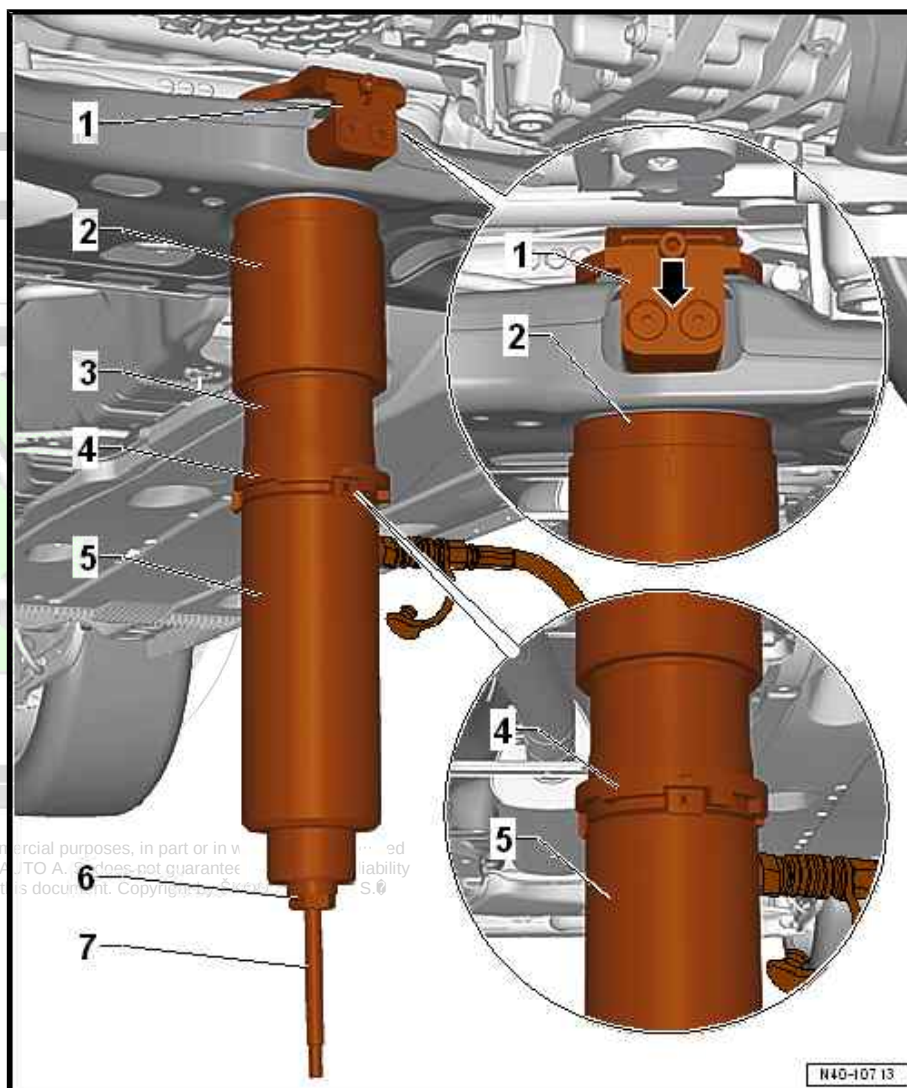
4 - Composite seal - VAS 6779/8-

- ❑ Marking -I- on the composite seal must line up with marking -X- on the thrust piece - VAS 6779/9- .

5 - Hydraulic cylinder - VAS 6178-

6 - Hexagon nut - VAS 6779/3-

7 - Threaded rod - VAS 6779/2-



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- Draw in both parts of the rubber-metal bearing.
- Remove the assembly device - VAS 6779- or -VAS 6779A- from the assembly carrier.
- Check the bearing of the rubber-metal bearing.
- Screw the anti-roll bar with the assembly carrier, and the coupling rods.
- Install pendulum support ⇒ Engine; Rep. gr. 10 .
- Install the noise insulation ⇒ Body Work; Rep. gr. 50 .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive", page 58](#)
- ◆ ⇒ ["3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive", page 62](#)

- ◆ Pendulum support ⇒ Engine; Rep. gr. 10 .
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

3.7 Removing and installing the anti-roll bar, sheet steel assembly carrier

⇒ "3.7.1 Removing and installing the anti-roll bar, steel sheet assembly carrier, left-hand drive", page 90

⇒ "3.7.2 Removing and installing the anti-roll bar, steel sheet assembly carrier, right-hand drive", page 92

3.7.1 Removing and installing the anti-roll bar, steel sheet assembly carrier, left-hand drive

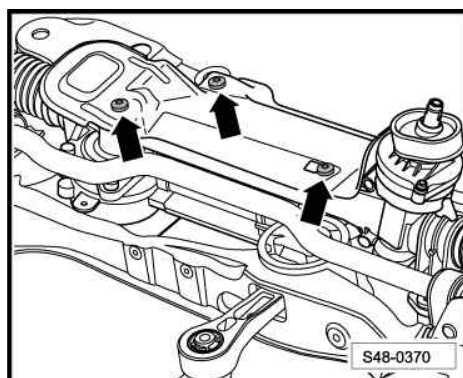
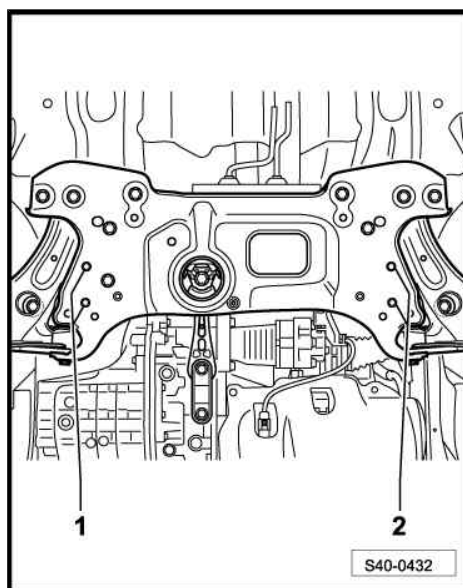
Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Ball joint extractor - 3287A-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

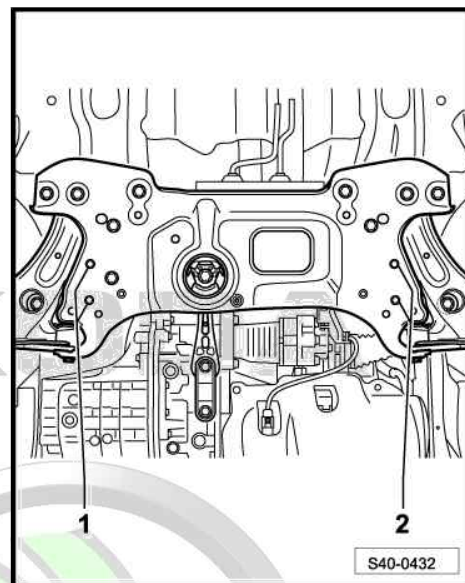
Removing

- Remove wheels.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Detach screws for stabiliser tabs -1- and -2-.
- Lower the assembly carrier in the service position
⇒ "3.3 Lower the assembly carrier in the service position, assembly carrier made of sheet steel", page 66 .

- Remove the heat shield -arrows- above the steering gear.



- Remove screws for stabiliser tabs -1- and -2-.



- Remove the anti-roll bar -1- from the assembly carrier towards the front via the support for the assembly carrier.

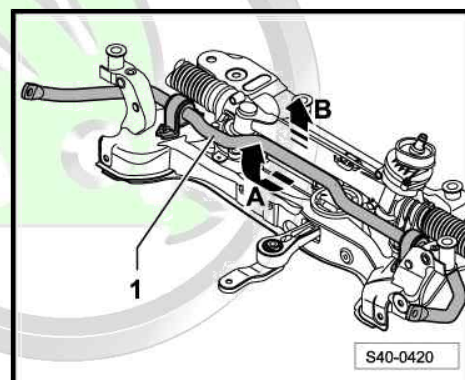
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ After positioning the steering gear on the drive shaft make sure the seal on the steering gear is not bent on the assembly plate and correctly seals the footwell opening. Otherwise this could cause water penetration and/or noise.
- ◆ Make sure all sealing surfaces are clean.



- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#).

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive", page 58](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50



3.7.2 Removing and installing the anti-roll bar, steel sheet assembly carrier, right-hand drive

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Ball joint extractor - 3287A-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Removing

- Remove assembly carrier without steering gear
⇒ ["3.4 Removing and installing assembly carrier without steering gear, sheet steel assembly carrier", page 70](#) .
- Remove screws for stabiliser tabs -1- and -2-.
- Remove anti-roll bar from assembly carrier.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#) .

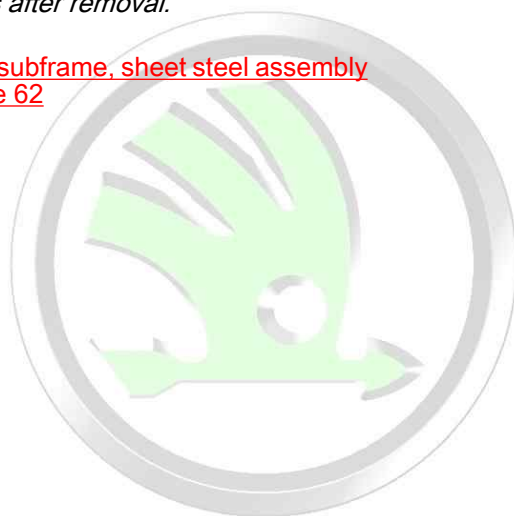
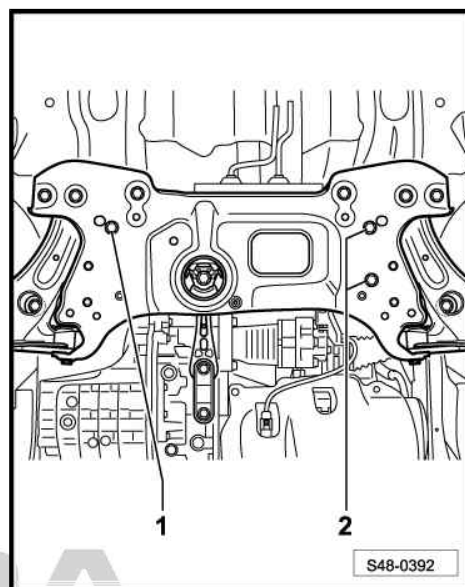
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

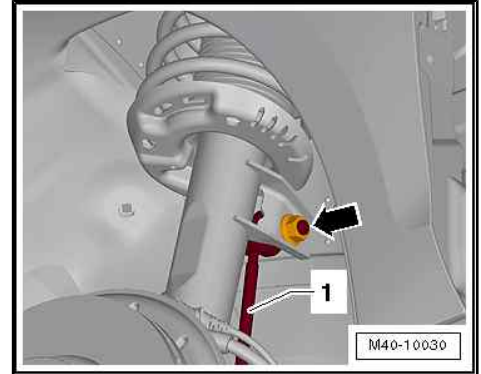
- ◆ ⇒ ["3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive", page 62](#)



3.8 Removing and installing coupling rod from anti-roll bar, sheet steel assembly carrier

Removing

- Unscrew nut -arrow-.



- Unscrew nut -1-.
- Pull out coupling rod -3- from the anti-roll bar -2-.

Installing

Installation is carried out in the reverse order.

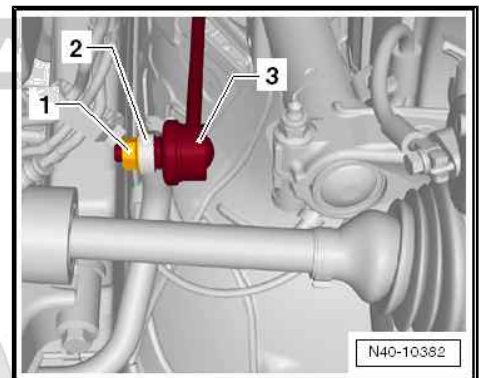
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)



3.9 Removing and installing the track control arm, sheet steel assembly carrier

⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)

⇒ [“3.9.2 Removing and installing left track control arm, sheet steel assembly carrier vehicles with an automatic gearbox”, page 96](#)

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3.9.1 Removing and installing the track control arm, sheet steel assembly carrier

Removing

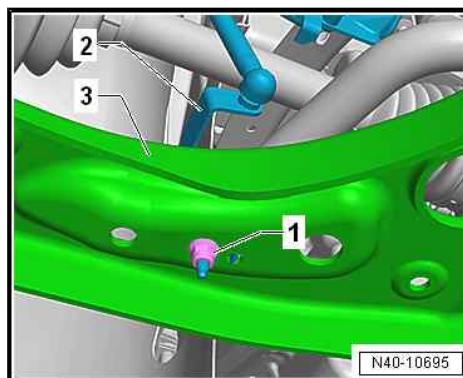
- Remove wheel.



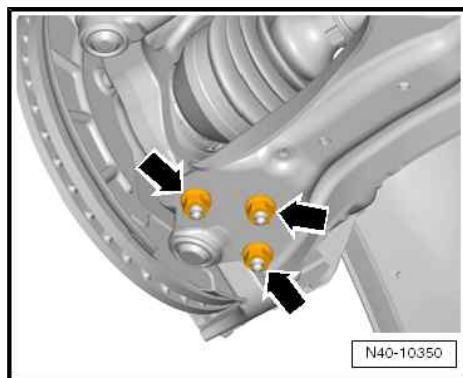
Vehicles with vehicle level sender

- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder -G78- from the wishbone -3-.

Continued for all vehicles



- Release fixing nuts -arrows-.
- Pull suspension link out of swivel joint and turn wheel bearing housing to outside to relieve load on suspension link.

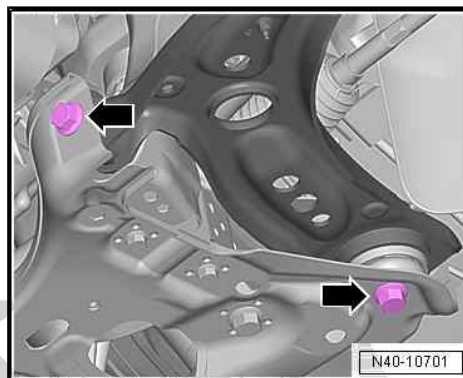


- Remove screws -arrows-.



Note

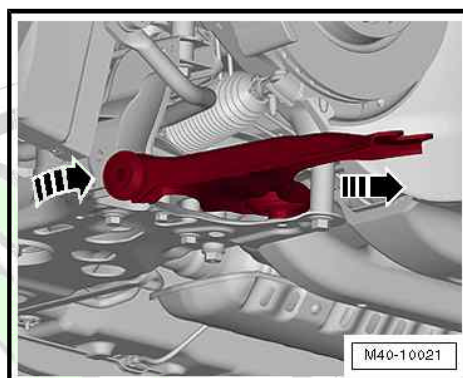
The rear bolt is fitted with a washer. Counterhold the washer when releasing.



- Turn the track control arm out of the assembly carrier and remove -arrows-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

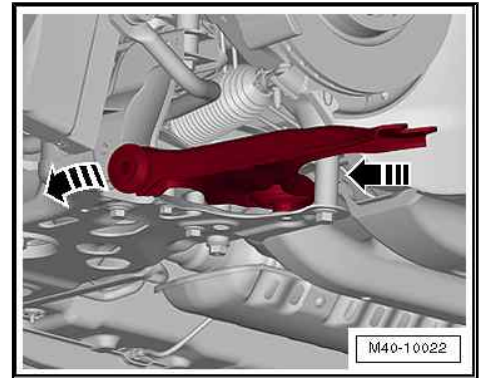


- Insert suspension link -arrow- at rear into assembly carrier, insert new screw with new nut, but do not tighten yet.
- Swivel suspension link forwards and insert into the assembly carrier.
- Screw in new bolt for front bearing bracket for wishbone partially, but do not tighten yet.

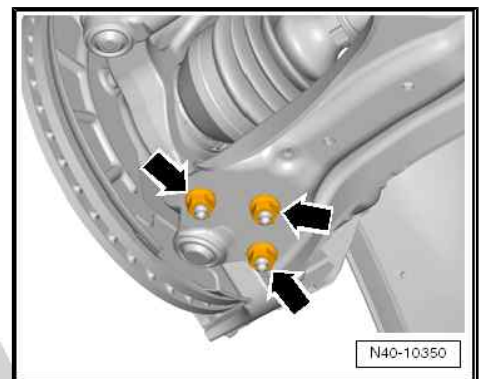
i Note

Tighten screws/nuts when the vehicle is in unladen weight position

⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.



- Insert swivel joint in suspension link and tighten bolts -arrows-.
- Move the vehicle into the unladen weight position
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.



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- Tighten the screws of the control arm -arrows- to the specified tightening torque.

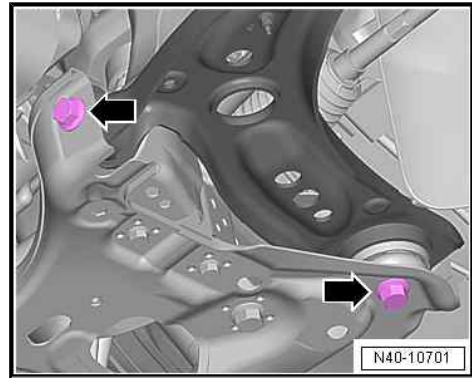


Note

Tighten screws/nuts when the vehicle is in unladen weight position

⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment

⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

3.9.2 Removing and installing left track control arm, sheet steel assembly carrier vehicles with an automatic gearbox

Special tools and workshop equipment required

- ◆ Fixing device - T10096- (smaller diameter)
- ◆ Fixing device - T10452- (larger diameter)
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-



Note

- ◆ *The following procedure applies to removing and installing the left suspension link.*
- ◆ *Removing and installing right suspension link*
⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#) .

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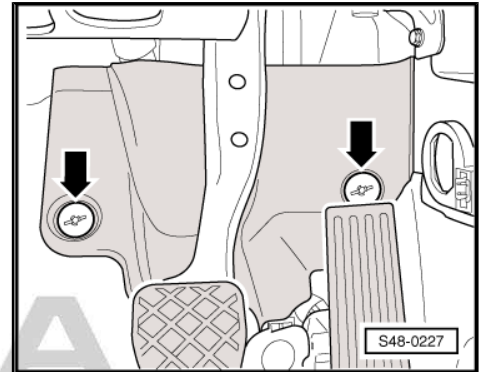
Removing

- Turn steering wheel to the straight ahead position.
- Remove the ignition key and lock the steering wheel lock.
- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .

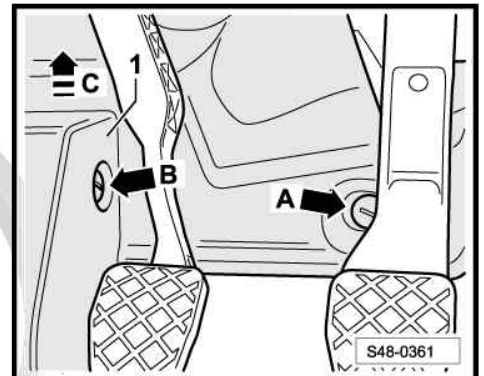
Left-hand drive

- Remove nuts -arrows- and remove the footwell trim.

Right-hand drive

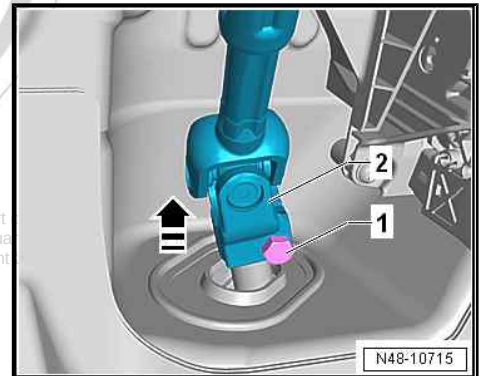


- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.



Continued for all vehicles

- Remove bolt -1- from universal coupling -2- and pull off universal joint in -direction of arrow-.



Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ ***Reconnecting battery***
- ◆ ***Switch on the ignition***
- ◆ ***Rotating the steering gear***
- ◆ ***Rotating the steering column***

You must observe these points because if you do not, irreparable damage may result.

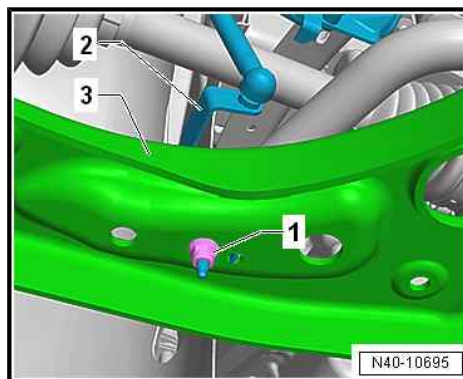
- Remove front left wheel.
- Dimension -a- Measure unladen weight of the vehicle
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5 ,
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

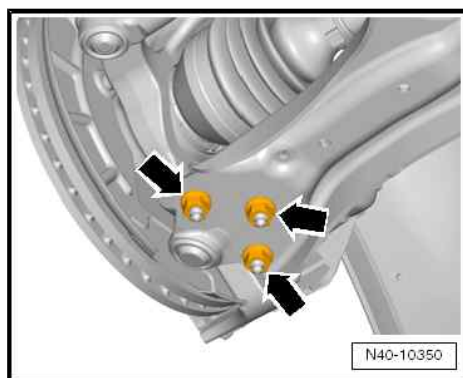


- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.

Continued for all vehicles



- Release fixing nuts -arrows-.



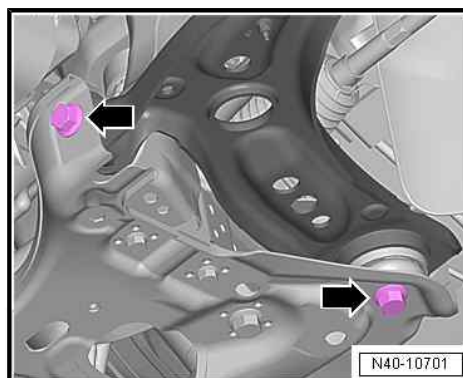
- Loosen screws -arrows- and leave temporarily screwed in.



Note

The rear bolt is fitted with a washer. Counterhold the washer when releasing.

- Pull suspension link out of swivel joint and turn wheel bearing housing to outside to relieve load on suspension link.
- Lower subframe by 3 cm. While doing so observe the electrical cables
⇒ “3.3 Lower the assembly carrier in the service position, assembly carrier made of sheet steel”, page 66 .

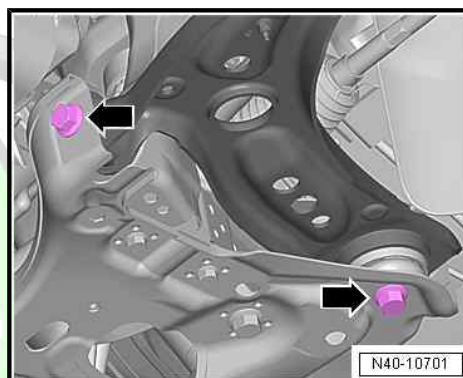


- Remove screws -arrows-.



Note

The rear bolt is fitted with a washer. Counterhold the washer when releasing.



- Turn the track control arm out of the assembly carrier and remove -arrows-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert suspension link -arrow- at rear into assembly carrier, insert new screw with new nut, but do not tighten yet.
- Swivel suspension link forwards and insert into the assembly carrier.
- Screw in new bolt for front bearing bracket for wishbone partially, but do not tighten yet.



Note

Tighten screws/nuts when the vehicle is in unladen weight position

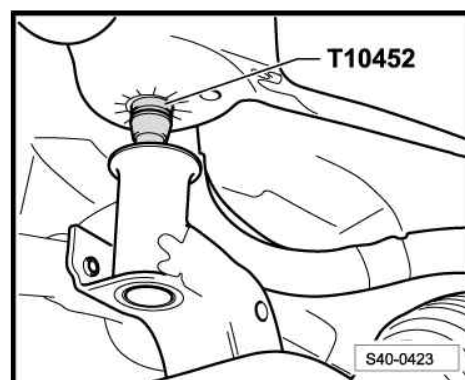
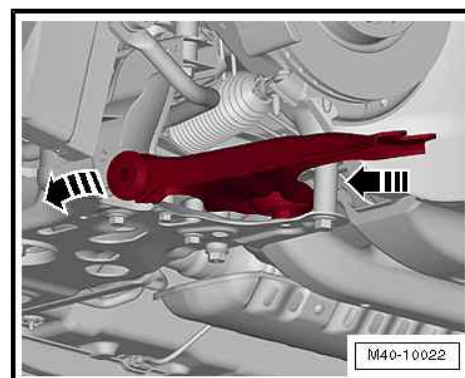
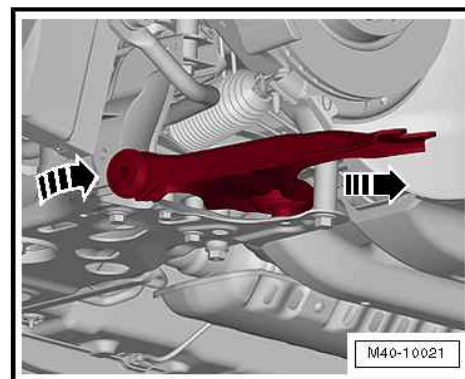
⇒ *"3.5 Lift the wheel bearing in the unladen weight position", page 5.*

- Raise the assembly carrier in such a way that the fixing holes of the assembly carrier rest fully against the fixing devices - T10096- and - T10452- , while doing so pay attention to the electrical cables.



Note

- ◆ *Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.*
- ◆ *When installing, make sure the steering gear boot is neither damaged nor twisted.*



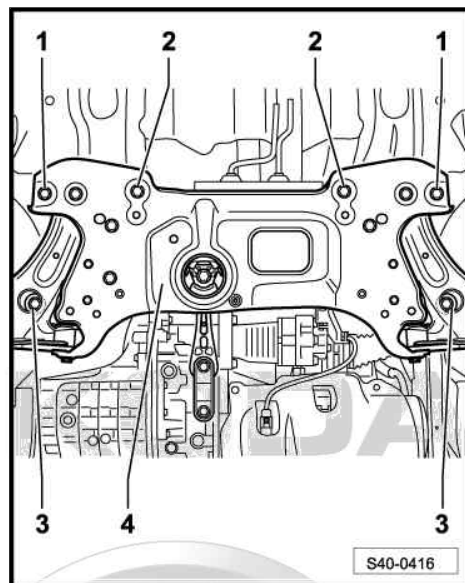


- Install new screws -1- ...
- Successively unscrew the fixing devices - T10096- and - T10452- on Pos. -2- and -3- and replace with new screws.

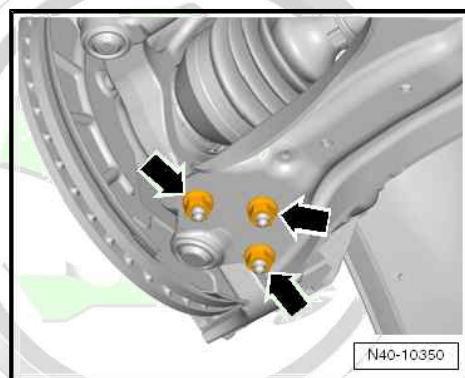


Note

- ◆ *Observe the different lengths of the fixing screws for assembly carrier.*
- ◆ *Tighten the fixing screws of the assembly carrier to the specified tightening torque.*

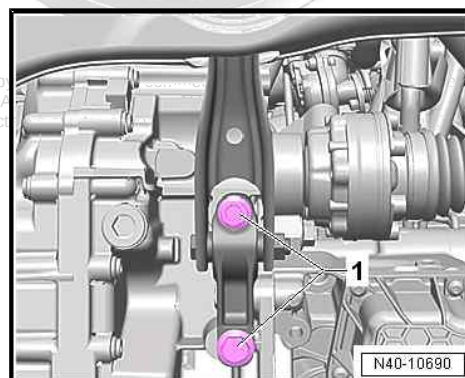


- Insert swivel joint in suspension link and tighten bolts -arrows-.

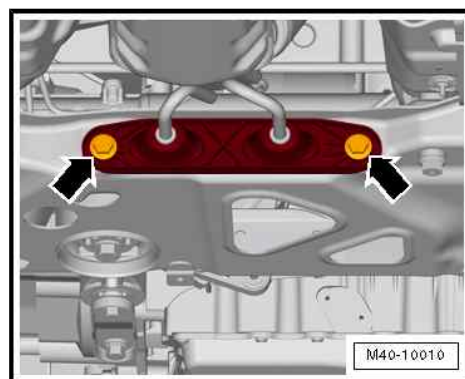


- Install new screws -1- of the pendulum support.

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- Install bracket for exhaust system -arrows-.
- Move the vehicle into the unladen weight position
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.



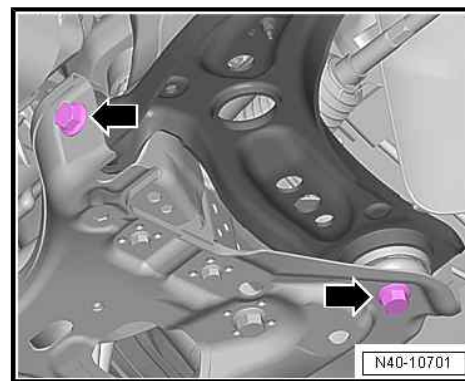
- Tighten the screws of the control arm -arrows- to the specified tightening torque.

i Note

Tighten screws/nuts when the vehicle is in unladen weight position

⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .
- Perform a test drive
- Check the steering wheel position during the test drive.



i Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment

⇒ [“3.3 Axle alignment”, page 309](#).

Tightening torques - summaries of components

i Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ [“3.1 Summary of components - assembly carrier, sheet steel assembly carrier”, page 58](#)

◆ ⇒ [“1.1 Summary of components - steering column”, page 320](#)

◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)

◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)

◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

◆ Pendulum support to gearbox ⇒ Engine; Rep. gr. 10

◆ Exhaust System ⇒ Engine; Rep. gr. 26

◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

3.10 Replacing rubber-metal bearing for track control arm, assembly carrier made of steel sheet

⇒ [“3.10.1 Replacing the rubber-metal bearing for track control arm, front bearing”, page 101](#)

⇒ [“3.10.2 Replacing the rubber-metal bearing for rear track control arm, rear bearing”, page 103](#)

3.10.1 Replacing the rubber-metal bearing for track control arm, front bearing

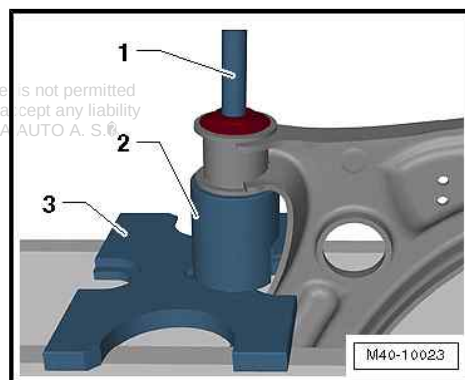
Special tools and workshop equipment required

- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Pipe section - T10219/1-
- ◆ Mandrel - T10219/2-
- ◆ Pressure spindle - MP3-408 (VW 412)-
- Removing the suspension link:
- ◆ Vehicles fitted with a manual gearbox
⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)
- ◆ with an ATF radiator for vehicles with an automatic gearbox
⇒ [“3.9.2 Removing and installing left track control arm, sheet steel assembly carrier vehicles with an automatic gearbox”, page 96](#)

Pressing out rubber-metal bearing

- Press out rubber-metal bearing as shown.

- 1 - Drive bushing - MP6-405 (VW 411)-
- 2 - Pipe section - T10219/1-
- 3 - Pressure plate - MP3-407 (VW 402)-



Installing front rubber-metal bearing

In order not to damage the rubber-metal bearing when inserting it, it must be positioned at an angle. During the press-in procedure the rubber-metal bearing straightens.

- Observe the fitting position of the rubber-metal bearing -1- to the track control arm -2-.

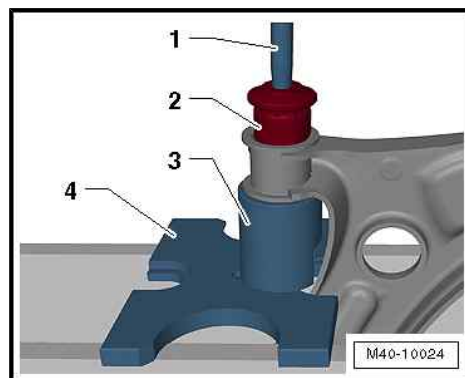
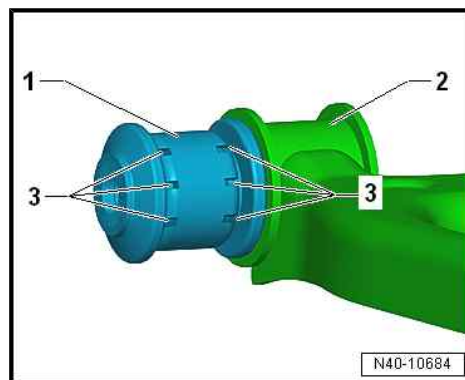
The grooves -3- must point to the suspension link -2- as shown.

In order not to damage the rubber-metal bearing when inserting it, it must be positioned at an angle. During the press-in procedure the rubber-metal bearing straightens.

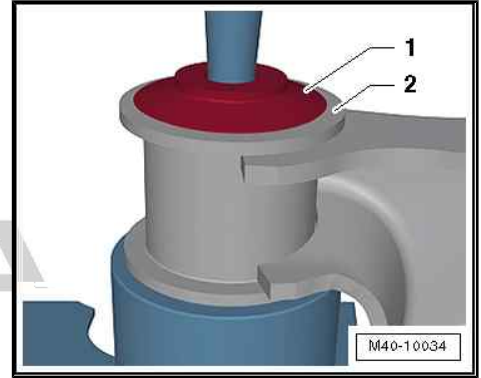
- Apply assembly sliding oil - G 294 421 A1- to the outside of the rubber-metal bearing.

- Position the rubber-metal bearing at an angle (in direction of track control arm), at the same time the lip must slide into the hole.

- 1 - Drift - T10219/2-
- 2 - Rubber-metal bearing
- 3 - Pipe section - T10219/1-
- 4 - Pressure plate - MP3-407 (VW 402)-

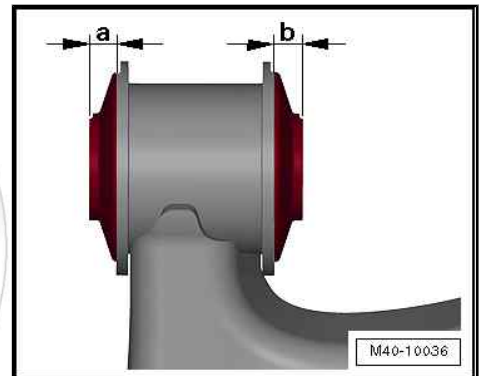


- Insert the core of the rubber-metal bearing -1- into the hole of the track control arm -2-.



Dimensions -a- and -b- must be identical.

If the dimensions -a- and -b- are not identical:



- Slightly pull back the bearing from the track control arm.

1 - Pressure spindle - MP3-408 (VW 412)-

2 - Pipe section - T10219/1-

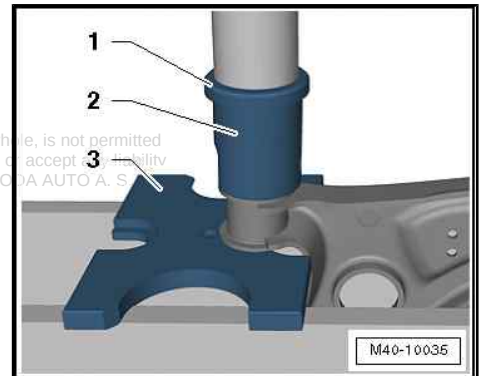
3 - Pressure plate - MP3-407 (VW 402)-

- Installing the track control arm

⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)

- Perform a test drive

- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#).

3.10.2 Replacing the rubber-metal bearing for rear track control arm, rear bearing

Special tools and workshop equipment required

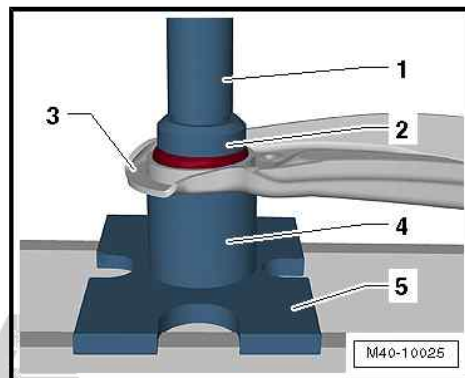
- ◆ Pressure spindle - MP3-423 (VW 407)-
- ◆ Assembly tool - MP5-401 (VW 3345)-
- ◆ Pipe - T30019-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Pressure spindle - MP3-408 (VW 412)-
- ◆ Pressure element - T10453-
- Removing the suspension link:

- ◆ Vehicles fitted with a manual gearbox
⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)
- ◆ with an ATF radiator for vehicles with an automatic gearbox
⇒ [“3.9.2 Removing and installing left track control arm, sheet steel assembly carrier vehicles with an automatic gearbox”, page 96](#)

Pressing out rear rubber-metal bearing

– Press out rubber-metal bearing as shown.

- 1 - Pressure spindle - MP3-423 (VW 407)-
- 2 - Assembly tool - MP5-401 (VW 3345)-
- 3 - Arm of wheel suspension - the hole in the arm of the wheel suspension must point upwards
- 4 - Pipe - T30019-
- 5 - Pressure plate - MP3-407 (VW 402)-

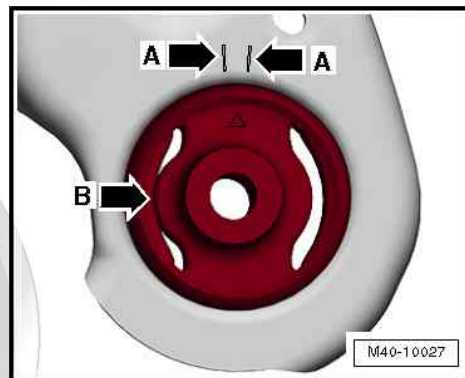


Installation position of rear bearing in arm of wheel suspension

Insert the rubber-metal bearing in such a way that the arrow of the bearing points between the set of markings -arrows A- on the arm of the wheel suspension.

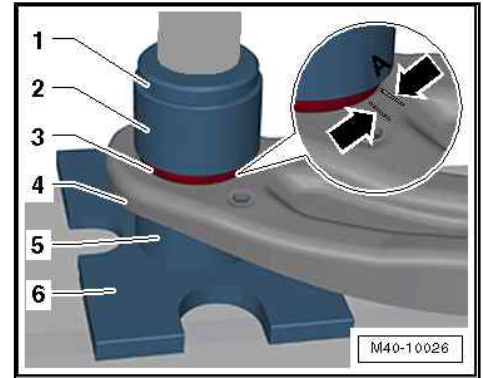
The shoulder -arrow B- must always point to the outside of the vehicle.

Inserting the rubber-metal bearing



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- Insert rubber-metal bearing as shown.
- 1 - Pressure spindle - MP3-408 (VW 412)-
- 2 - Pressure element - T10453- - the marking -A- on the pressure element must point to the markings -arrows- on the arm
- 3 - Rubber-metal bearing
- 4 - Arm of wheel suspension - the hole in the arm of the wheel suspension must point downwards
- 5 - Pipe - T30019-
- 6 - Pressure plate - MP3-407 (VW 402)-



Note

Insert the rubber-metal bearing in such a way that the pressure element - T10453- rests against the arm of the wheel suspension.

- Installing the track control arm
⇒ [“3.9.1 Removing and installing the track control arm, sheet steel assembly carrier”, page 93](#)
- Perform a test drive
- Check the steering wheel position during the test drive.



Note

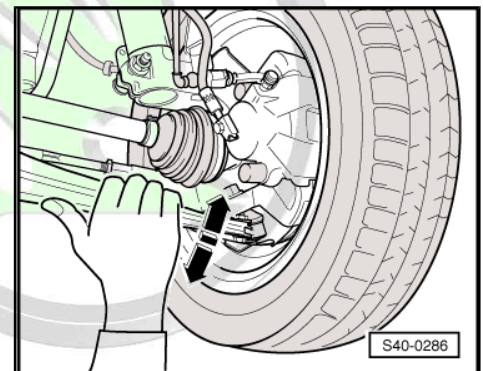
*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#).*

3.11 Inspecting the suspension link

Inspecting axial play

- Pull the track control arm down with force and push up again.

Inspecting radial play



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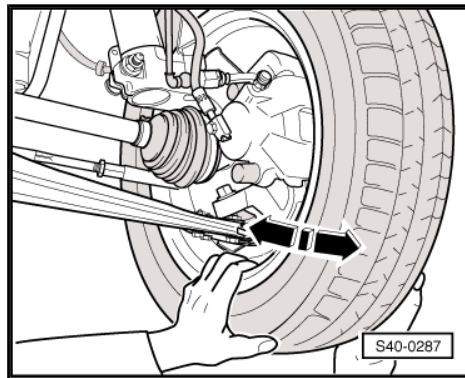


- Forcefully push the wheel at the bottom towards the inside and the outside.



Note

- ◆ For these two tests no “play” may be felt or be visible.
- ◆ Observe the suspension link during the tests.
- ◆ Take into account possible wheel bearing play or “play” in top suspension strut bearing.
- ◆ Inspect rubber bellows for damage, if necessary replace.



3.12 Removing and installing the suspension link

Special tools and workshop equipment required

- ◆ Ball joint extractor - 3287A-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”](#),
[page 158](#) .



Note

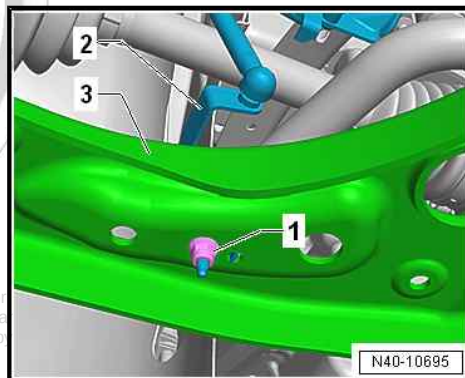
- ◆ If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e the vehicle must not stand on its wheels.
- ◆ If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.
- ◆ If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.

- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

Vehicles with vehicle level sender

- Unscrew nut -1-.
- Undo holder -2- from the front left vehicle level sensor - G78- and front right vehicle level sender - G289- from the suspension link -3-.

Continued for all vehicles

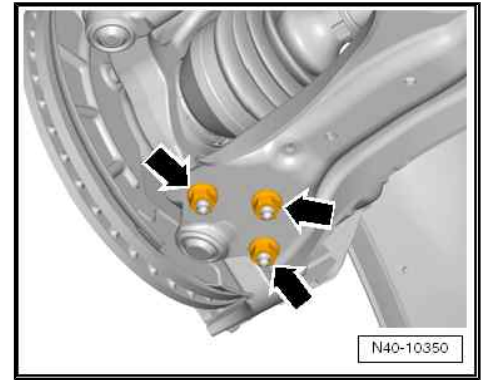


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- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.

i Note

- ◆ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ◆ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
page 155 .*
- Slacken the nut of the steering joint and partially unscrew.



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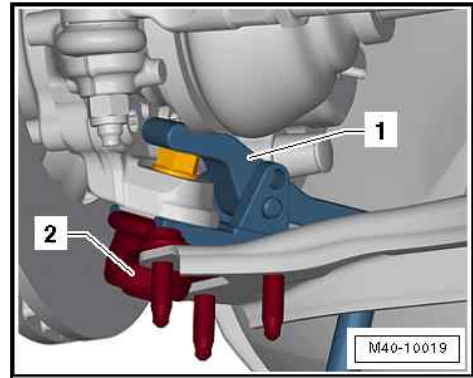


- Using the ball joint extractor - 3287A- -1-, press the steering joint -2- out from the wheel-bearing housing.



Note

- ♦ *Risk of accident while the steering joint is being pressed out; observe: the ball joint extractor - 3287A- can fall off when loosening the pivot pin, therefore place the engine/gearbox jack underneath, e.g. -V.A.G 1383A - or -VAS6931- with a wooden plate.*
- ♦ *To protect the thread, only partially unscrew the nut of the steering joint, in order to position the ball joint extractor - 3287A-.*



Installing

- Insert suspension link in the wheel-house bearing. Note installation position
⇒ [Fig. "Fitting position according to the identification -arrow- on the suspension link", page 13](#).



Note

Make sure the steering joint boot is neither damaged nor twisted.

- Screw on and tighten new self locking nut of steering joint.



Note

Use the Torx key to counterhold at the suspension.

- Insert drive shaft back into the wheel-bearing housing.

Installation is carried out in the reverse order. When installing, note the following:

- Tighten fixing screw of drive shaft to wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#).



Note

At the same time the vehicle must not be standing on its wheels, otherwise the wheel bearing will be damaged.

- On vehicles with vehicle level encoder, after disconnecting and connecting the connector, perform the basic adjustment of the headlamps ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ ["3.1 Summary of components - assembly carrier, sheet steel assembly carrier", page 58](#)
- ♦ ⇒ ["1.1 Summary of components - vehicle level sender front", page 293](#)



- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

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4 Wheel suspension

⇒ [“4.1 Summary of components of wheel suspension”, page 110](#)

⇒ [“4.2 Removing and installing the suspension strut”, page 111](#)

⇒ [“4.3 Repairing suspension strut”, page 116](#)

⇒ [“4.4 Inspect shock absorber”, page 118](#)

⇒ [“4.5 Degas front gas-filled shock absorber, and empty.”, page 120](#)

4.1 Summary of components of wheel suspension

1 - Shock absorber

- ☐ can be replaced separately
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Check
 - ⇒ [“4.4 Inspect shock absorber”, page 118](#)
- ☐ disposing of
 - ⇒ [“4.5 Degas front gas-filled shock absorber, and empty.”, page 120](#)

2 - Stop buffer

3 - Boot

4 - Coil spring

- ☐ Removing and installing
 - ⇒ [“4.3 Repairing suspension strut”, page 116](#)
- ☐ check colour coding
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ The surface of the spring coil must not be damaged

5 - Axial grooved ball bearing

6 - Suspension strut bearing

- ☐ Note installation position
 - ⇒ [“4.2 Removing and installing shock absorber”, page 241](#)

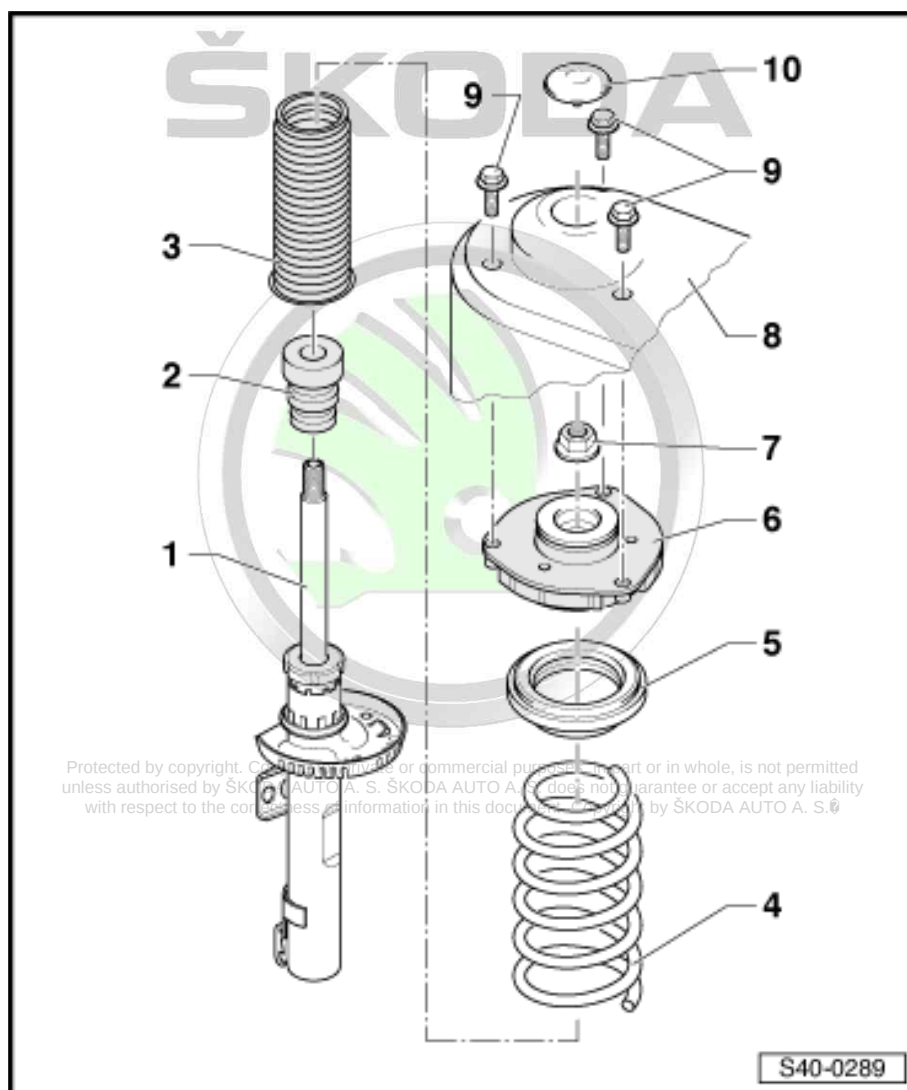
7 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 60 Nm

8 - Suspension strut dome

9 - Screw

- ☐ replace after each removal



□ 15 Nm + 90°

10 - Protective cap

4.2 Removing and installing the suspension strut

Special tools and workshop equipment required

- ◆ Spreader - 3424-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Support - T10149-

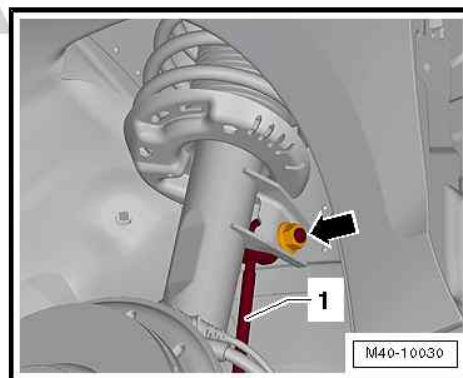
Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#)



Note

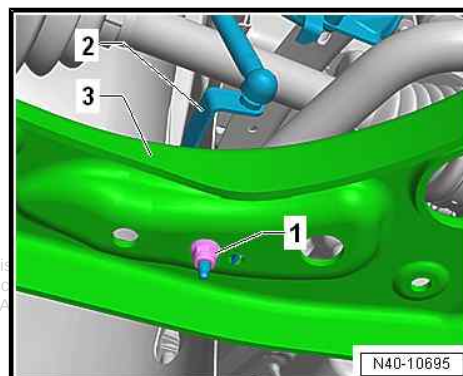
- ◆ *If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e the vehicle must not stand on its wheels.*
- ◆ *If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.*
- ◆ *If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.*
- Remove wheel.
- Unscrew nut -arrow- and pull coupling rod -1- out from suspension strut.
- Unhook ABS speed sensor cable at the suspension strut.



Vehicles with vehicle level sender

- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.

Continued for all vehicles



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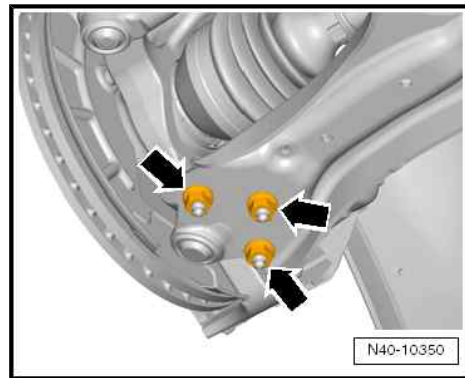


- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



Note

- ◆ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ◆ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
[page 155](#).*

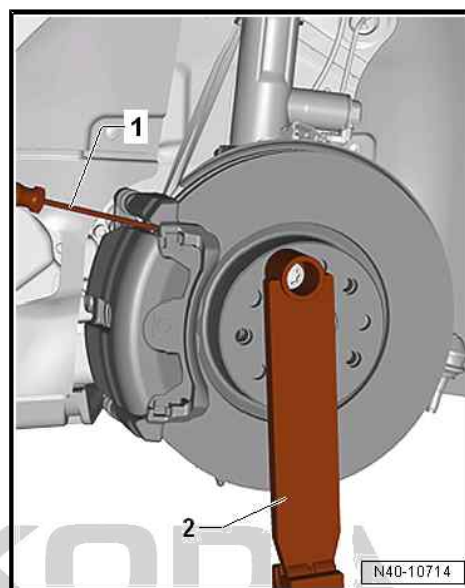


- Plug a screwdriver -1- into the brake disc between the brake calliper and brake anchor plate.
- Secure the engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with support - T10149- -2- on the wheel hub with a wheel bolt.

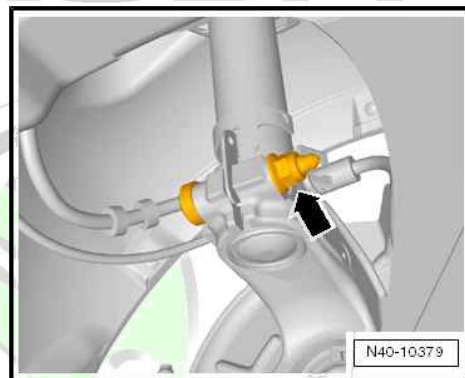


Note

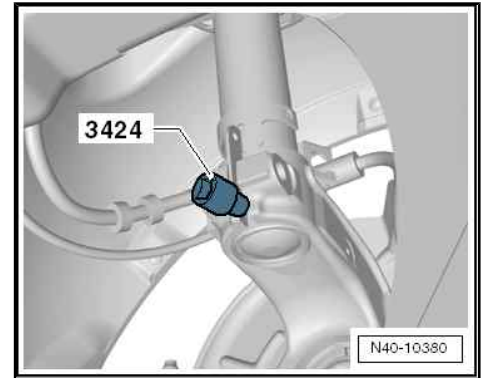
- ◆ *Do not lift or lower vehicle while engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- is under vehicle. The vehicle could slip off the lifting platform.*
- ◆ *Do not leave the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- positioned under the vehicle for longer than necessary.*



- Separate the screwed connection wheel-bearing housing/suspension strut -arrow-.



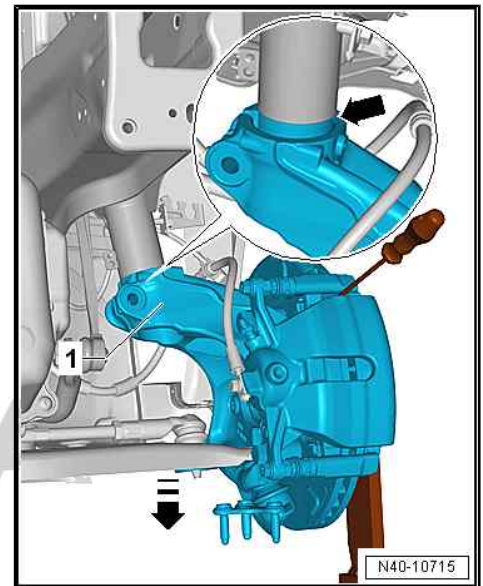
- Insert the spreader - 3424- in the slot on the wheel-bearing housing.
 - Turn ratchet with spreader - 3424 - by 90° and remove ratchet.
 - Press the brake disc by hand towards the suspension strut.
- Otherwise the shock absorber tube can cant in the opening of the wheel bearing housing.



- Lower the wheel bearing housing -1- with the engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- until the shock absorber tube hangs freely, -arrow-.
- Screw the wheel bearing housing back to the suspension link and secure the wheel bearing housing to the assembly carrier.
- Remove the engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- under the support - T10149- .

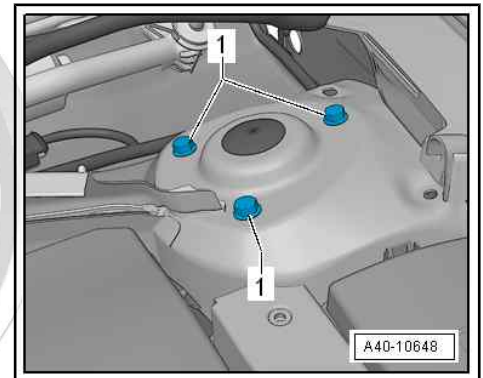
i Note

- ◆ Do not lift or lower vehicle while engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- is under vehicle. The vehicle could slip off the lifting platform.
- ◆ Do not leave the engine/gearbox jack e. g. -V.A.G 1383A- or -VAS6931- positioned under the vehicle for longer than necessary.

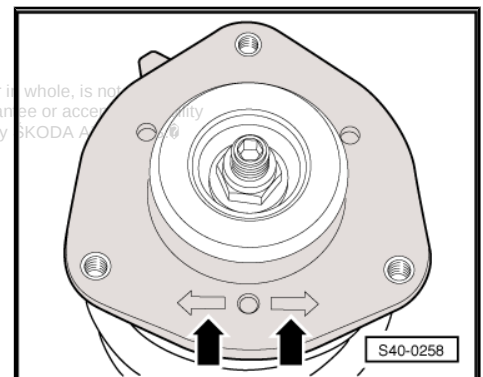


- Remove plenum chamber cover ⇒ Body Work; Rep. gr. 66 .
- Unscrew screws -arrows- for top shock-absorber fixture and take out suspension strut.

Installing



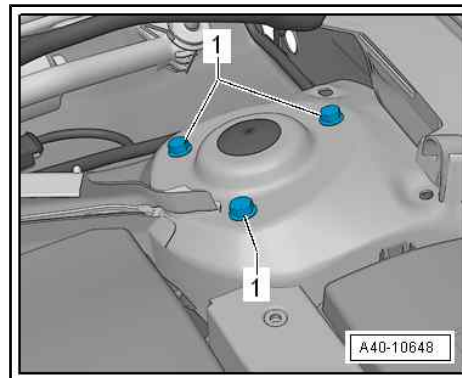
- Insert suspension strut, while doing so one of the two markings -arrows- must point in direction of travel.



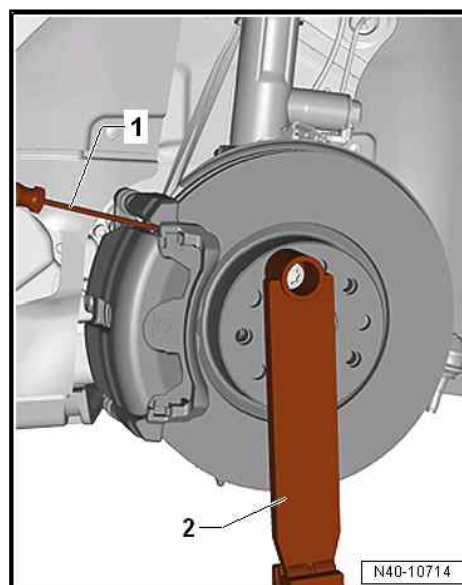
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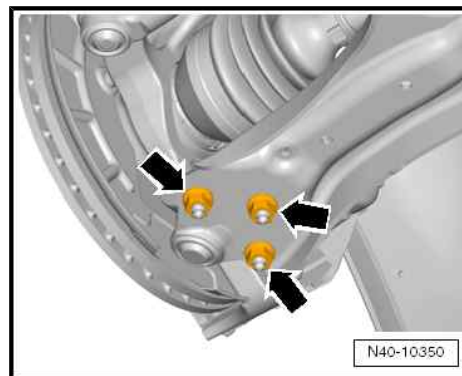
- Tighten the screws -1- to the specified tightening torque.
- Install the plenum chamber cover ⇒ Body Work; Rep. gr. 66 .



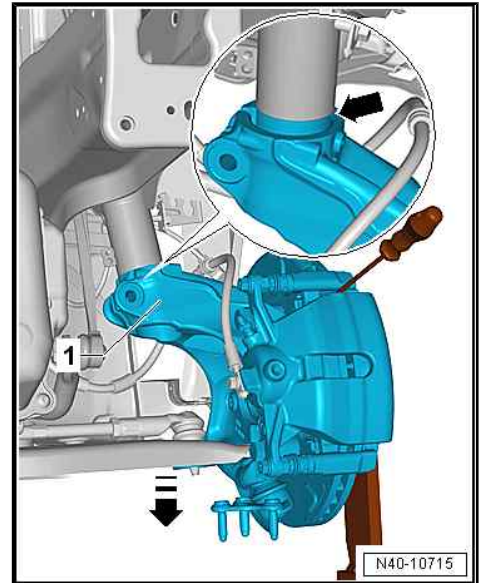
- Attach engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with support - T10149- to the wheel hub with a wheel bolt.
- Loosen the wheel bearing housing from the assembly carrier.



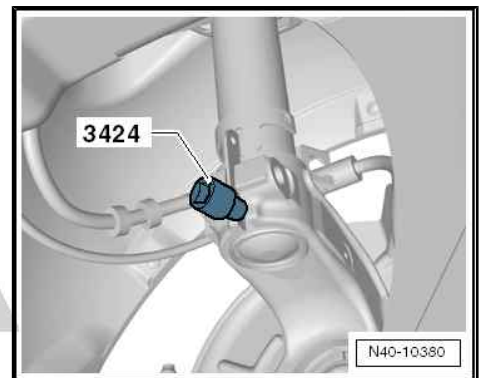
- Release fixing nuts -arrows-.
- Pull the wheel-bearing housing with suspension link out of the track control arm.



- Lower the wheel bearing housing -1- with engine and gearbox jack e.g. -V.A.G 1383/A- or -VAS6931- in the direction of the arrow-.
- Raise the wheel bearing housing with engine and gearbox jack e.g. -V.A.G 1383/A- or -VAS6931- and thread it onto the suspension strut at the same time.
- Screw the suspension link with suspension link and press the wheel bearing housing further upwards until the end position on the suspension link has been reached.



- Remove spreader - 3424- .



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- Insert a new screw with the tip pointing in the driving direction.

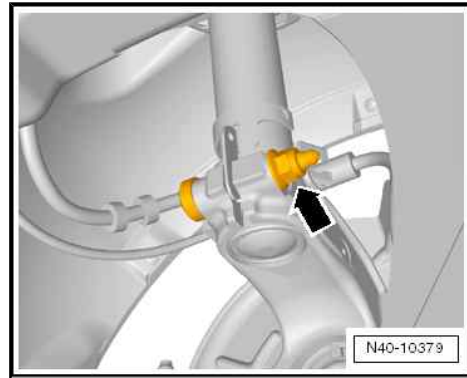
Installation is carried out in the reverse order. When installing, note the following:

- Tighten fixing screw of drive shaft to wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

- ◆ *If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e the vehicle must not stand on its wheels.*
- ◆ *If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.*
- ◆ *If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.*
- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“4.1 Summary of components of wheel suspension”, page 110](#)
- ◆ ⇒ [“5.1 Summary of components of the wheel bearing”, page 121](#)
- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

4.3 Repairing suspension strut

Special tools and workshop equipment required

- ◆ Spring tensioning device , e.g. -V.A.G 1752/1-
- ◆ Spring holder , e.g. -V.A.G 1752/5-
- ◆ Shock absorber set - T10001-

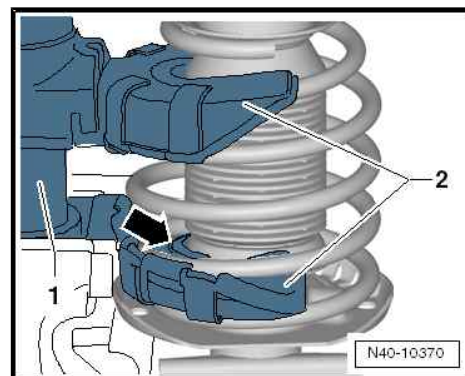
Removing the coil spring

- Remove shock absorber
⇒ [“4.2 Removing and installing the suspension strut”](#),
[page 111](#).

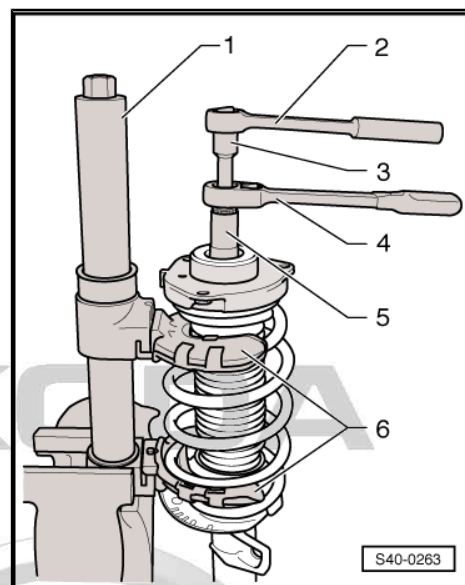


Note

- ◆ Ensure that the coil spring -arrow- is correctly seated in the spring tensioner e.g. -V.A.G 1752/1- -2-.
- ◆ Do not use an impact screw driver when working with the spring tensioner.



- Preload the coil spring with tensioning device e.g. -V.A.G 1752/1- until the top axial grooved ball bearing is released.
- 1 - Remove the nut from the piston rod using the socket insert - T10001/5- -5-. While doing so, counterhold the piston rod with socket insert - T10001/8- with an external hexagonal key -3-.
- 2 - Spring tensioning device , e.g. -V.A.G 1752/1-
- 3 - Torque wrench
- 4 - Socket - T10001/8-
- 5 - Ratchet - T10001/11-
- 6 - Socket - T10001/5-
- 7 - Spring holder , e.g. -V.A.G 1752/4-
- Remove individual parts of the suspension strut and the coil spring using the spring tensioning device , e.g. -V.A.G 1752/1- .



Installing the coil spring

- Insert the spring seat -1- into the shock absorber -2-.
- Place the coil spring -3- with spring tensioner e.g. -V.A.G 1752/1- onto the lower spring seat.

The thread end of the helical spring must lie against the stop -arrow-.

Further installation occurs in reverse order.

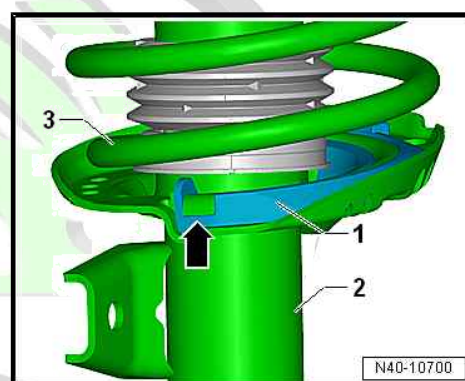
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“4.1 Summary of components of wheel suspension”](#),
[page 110](#)



4.4 Inspect shock absorber

⇒ "4.4.1 Leaks on the shock absorber", page 118

⇒ "4.4.2 Noises on the shock absorber", page 118

⇒ "4.4.3 Inspecting the removed shock absorber without gas pressure", page 119

⇒ "4.4.4 Inspecting the removed shock absorber with gas pressure", page 119

4.4.1 Leaks on the shock absorber

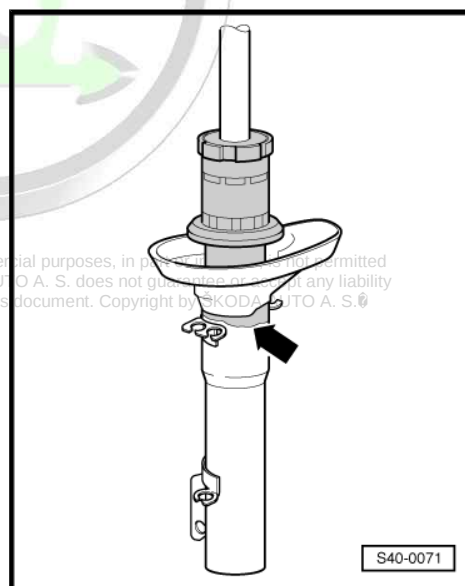
Minor oil leakage (sweating) on the piston rod seal does not entail the replacement of the shock absorber.

If an oil leak is visible (but blunt, dull, possibly dried by dust) and does not propagate any further than from the top shock-absorber screw plug (piston rod seal) to the bottom spring cap -arrow-, the shock absorber is deemed to be O.K.



Note

A slight oil leak is beneficial as the gasket is lubricated and this increases the life time. This applies for shock absorbers on the front as well as the rear axle.



4.4.2 Noises on the shock absorber

There is reason to believe that in the event of noise complaints the shock absorbers are all too often considered as the source.

Possible causes of noise may be e.g.:

- ◆ defective shock absorber
- ◆ suspension strut/body attachment is loose
- ◆ defective axial grooved ball bearing
- ◆ poor operation of the suspension strut
- ◆ defective outer joint
- ◆ defective wheel bearing
- ◆ cracked welding points on body
- ◆ parts loosened or overtensioned when installed (exhaust system, attachments, flaps, etc.)



Note

In the event of complaints about noises interpreted as knocking or cracking noises, always first perform a test drive with the customer to determine where, when and how these noises occur (preferably on a bumpy dry road).

4.4.3 Inspecting the removed shock absorber without gas pressure

Defective shock absorbers become noticeable while driving because of the knocking noises caused by wheel hopping, more specifically on poor road surfaces and they must be replaced. The failure is mainly caused by the loss of oil. The shock absorber then compresses and/or expands in jolts. It exhibits "idle", before it begins to operate.



Note

The shock absorbers are maintenance-free. It is not possible to top up the shock absorber oil.

4.4.4 Inspecting the removed shock absorber with gas pressure

Damaged shock absorbers with gas pressure become noticeable because of a loud banging sound, caused by wheel hopping, and also because a strong oil leak occurs.

Manual testing, as described below, can determine if the shock absorber is damaged or not:

- Compress the shock absorber by hand.
- The piston rod must move evenly over the entire stroke without jolting.
- Release the piston rod. On sufficiently pressurized shock absorbers it will automatically return to its original position.

If this is not the case, the shock absorber need not necessarily be replaced, as it will still operate as a conventional shock absorber (see instructions below).



Note

- ◆ *The absorbing function is still fully present without sufficient gas pressure as long as the oil leakage is not too large. However, the noise level may increase. On older vehicles it is possible to continue using an operational yet pressureless shock absorber without problem.*
- ◆ *Adequate gas pressure in the shock absorber improves the noise behaviour and function when driving over poor road surfaces.*

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4.5 Degas front gas-filled shock absorber, and empty.

- Clamp gas-filled shock absorber vertically with the piston rod pointing downwards in a vice.



Caution

Wear safety goggles during the drilling procedure.

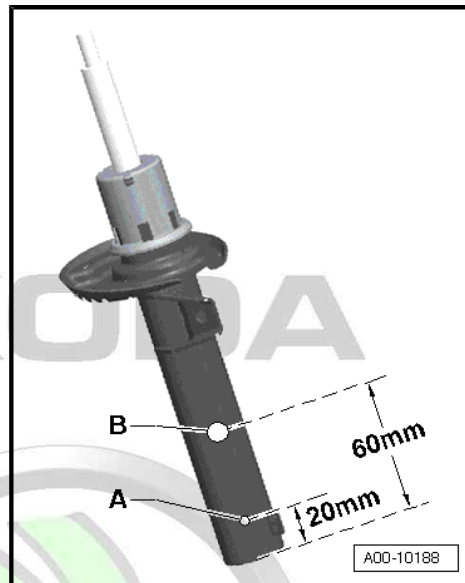
- Drill a hole $\varnothing$ 3 mm -A- through the outer pipe of the shock absorber.



Note

Gas will escape during drilling.

- Drill further until the inner pipe has also been drilled through (approx. 25 mm deep).
- Drill a second hole $\varnothing$ 6 mm -B- through the outer and inner shock absorber pipes.
- Hold the shock absorber over an oil catching pan. Move the piston rod several times up and down over its entire stroke until no more oil escapes.



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5 Wheel bearing

⇒ ["5.1 Summary of components of the wheel bearing", page 121](#)

⇒ ["5.2 Removing and installing the wheel hub with wheel bearing", page 122](#)

⇒ ["5.3 Removing and installing wheel bearing housing", page 126](#)

5.1 Summary of components of the wheel bearing

1 - Wheel hub with wheel bearing

- ☐ 3-point support - FS III brake
- ☐ Removing and installing
⇒ ["5.2 Removing and installing the wheel hub with wheel bearing", page 122](#)
- ☐ Sensor ring for ABS is built into the wheel hub
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

2 - Wheel bearing housing

- ☐ 3-point support - FS III brake
- ☐ Removing and installing
⇒ ["5.3 Removing and installing wheel bearing housing", page 126](#)
- ☐ If the wheel bearing housing is replaced, the vehicle must be aligned
⇒ ["3.3 Axle alignment", page 309](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

3 - Suspension strut

4 - Screw

- ☐ the tip of bolt must point in the direction of travel

5 - Front left wheel speed sensor - G47- / Front right wheel speed sensor - G45-

- ☐ removing and installing ⇒ Brake systems; Rep. gr. 45

6 - Screw

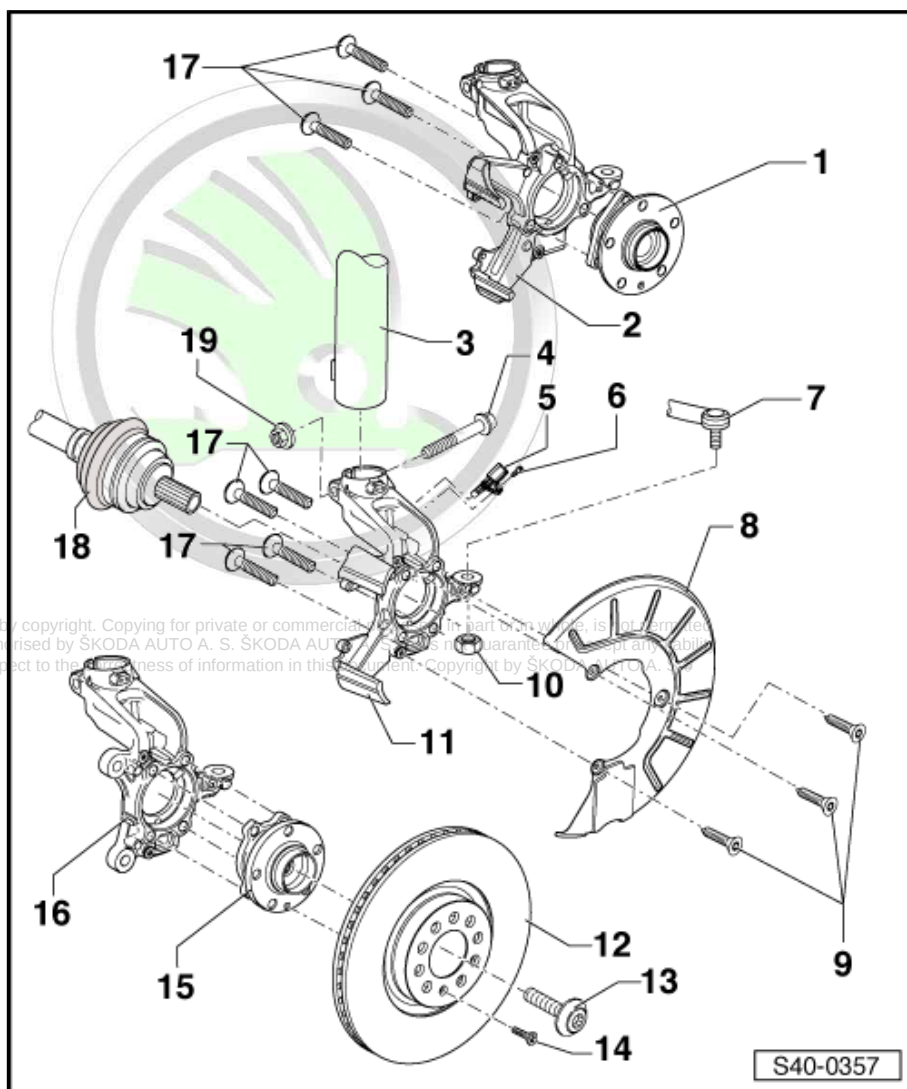
- ☐ Tightening torque ⇒ Brake systems; Rep. gr. 45

7 - Track rod end

8 - Protection plate

9 - Screw

- ☐ Tightening torque ⇒ Brake systems; Rep. gr. 46



10 - Nut

- ☐ replace after each removal
- ☐ Tightening torque ⇒ [“2.1 Summary of components - steering gear”, page 356](#)

11 - Wheel bearing housing

- ☐ 4-point support - FS III brake
- ☐ Removing and installing ⇒ [“5.3 Removing and installing wheel bearing housing”, page 126](#)
- ☐ If the wheel bearing housing is replaced, the vehicle must be aligned
⇒ [“3.3 Axle alignment”, page 309](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

12 - Brake disc

- ☐ internally ventilated

13 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ☐ Tightening torque ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)

14 - Screw

- ☐ Tightening torque ⇒ Brake systems; Rep. gr. 46

15 - Wheel hub with wheel bearing

- ☐ 4-point support - FS III and FN3 brake
- ☐ Removing and installing ⇒ [“5.2 Removing and installing the wheel hub with wheel bearing”, page 122](#)
- ☐ Sensor ring for ABS is built into the wheel hub
- ☐ different versions
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

16 - Wheel bearing housing

- ☐ 4-point support - FN3 brake
- ☐ Removing and installing ⇒ [“5.3 Removing and installing wheel bearing housing”, page 126](#)
- ☐ If the wheel bearing housing is replaced, the vehicle must be aligned
⇒ [“3.3 Axle alignment”, page 309](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

17 - Screw

- ☐ replace after each removal
- ☐ 70 Nm + 90°

18 - Drive shaft

- ☐ Removing and installing ⇒ [“6.4 Removing and installing cardan shaft”, page 140](#)

19 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 70 Nm + 90°

5.2 Removing and installing the wheel hub with wheel bearing

Removing

- Remove fixing screw of drive shaft at wheel hub

⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).

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i Note

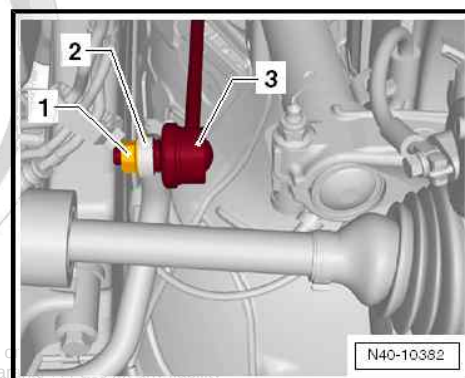
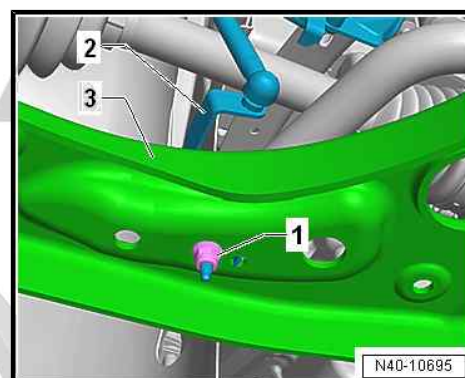
- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove brake caliper or brake caliper with brake carrier and tie with wire to the body ⇒ Brake systems; Rep. gr. 46 .
- Remove the ABS-speed sensor ⇒ Brake systems; Rep. gr. 45 .
- Remove brake disc ⇒ Brake systems; Rep. gr. 46 .

Vehicles with vehicle level sender

- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder -G78- from the wishbone -3-.

Continued for all vehicles

- Remove coupling rod -3- from the anti-roll bar -2-.



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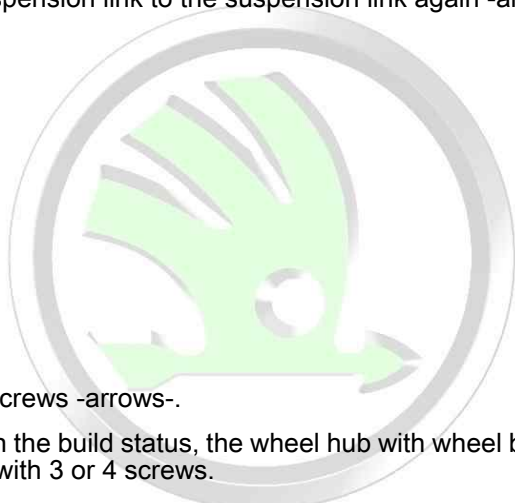
- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



Note

- ♦ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub."
page 155.*
- ♦ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*

- Screw suspension link to the suspension link again -arrows-.

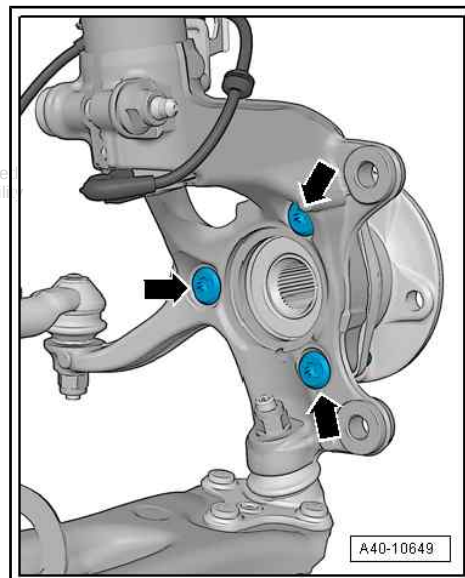
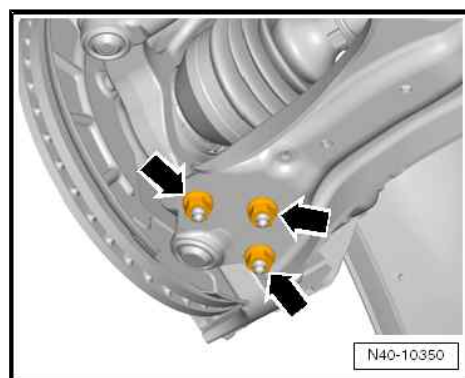
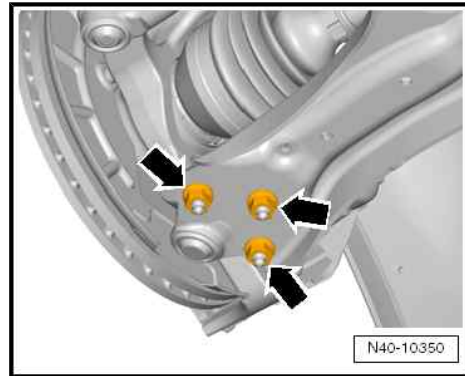


- Remove screws -arrows-.

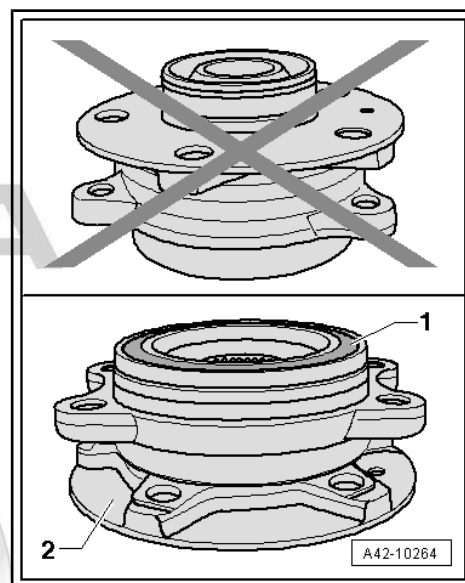
Depending on the build status, the wheel hub with wheel bearing is supported with 3 or 4 screws.

- Remove the wheel bearing out of the wheel-bearing housing.

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- When laying the wheel bearing unit in position, the wheel bearing -1- must always point upwards.
- Always lay the wheel bearing unit on the wheel hub -2-.
- When picking up the wheel bearing, never take hold from the inside.
- Only take hold of the wheel bearing from the outside.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Tighten fixing screw of drive shaft to wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#).



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

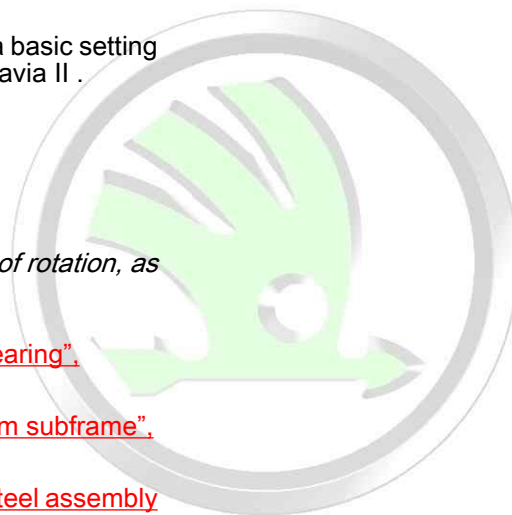
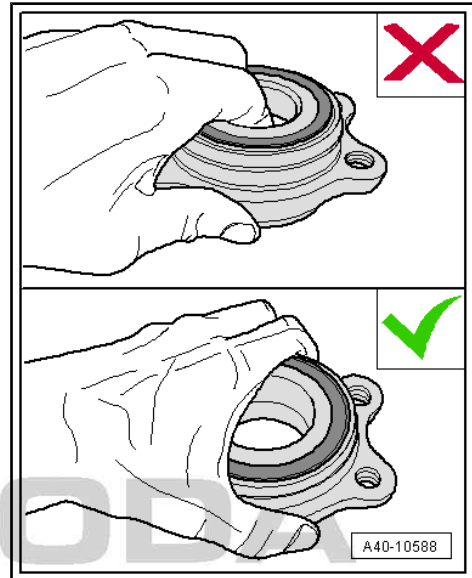
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["5.1 Summary of components of the wheel bearing", page 121](#)
- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive", page 58](#)
- ◆ ⇒ ["3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive", page 62](#)
- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ ABS speed sensor ⇒ Brake systems; Rep. gr. 45
- ◆ Brake disc, brake caliper, brake carrier ⇒ Braking systems; Rep. gr. 46

5.3 Removing and installing wheel bearing housing

Special tools and workshop equipment required

- ◆ Ball joint extractor - 3287A-
- ◆ Spreader - 3424-
- ◆ Engine/gearbox jack , e.g. -V.A.G 1383/A-



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Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#) .



Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*

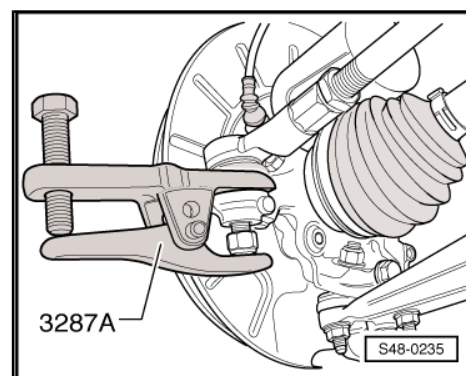
- Remove wheel.
- Remove brake caliper with brake carrier and tie with wire to the body ⇒ Brake systems; Rep. gr. 46 .
- Remove the ABS-speed sensor ⇒ Brake systems; Rep. gr. 45 .
- Remove brake disc ⇒ Brake systems; Rep. gr. 46 .
- Removing heat shield from wheel-bearing housing.
- Loosen nut of track rod end, but do not unscrew yet.



Note

To protect the thread, screw the nut a couple of thread turns onto the pivot pin.

- Push the suspension link/track rod off the wheel bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod.
- Pull track rod end out of the wheel bearing housing.

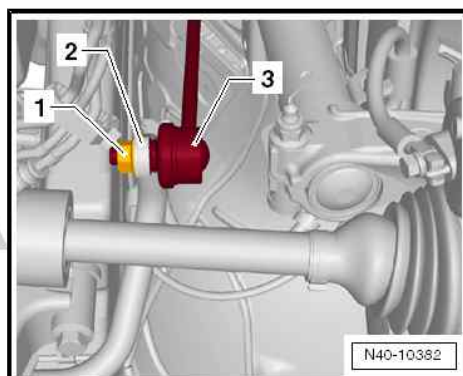
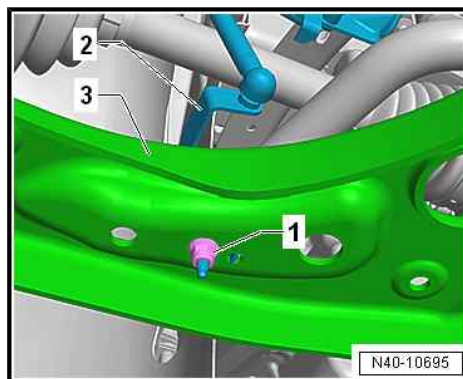


Vehicles with vehicle level sender

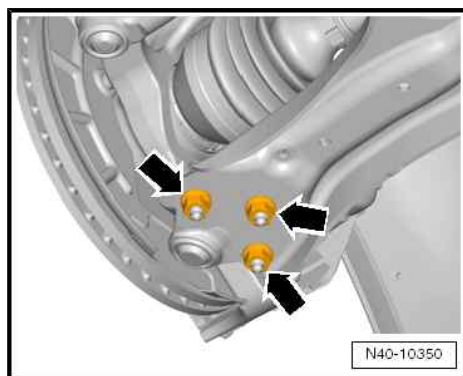
- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder -G78- from the wishbone -3-.

Continued for all vehicles

- Unscrew nut -1- from coupling rod -3-.
- Pull out coupling rod -3- from the anti-roll bar -2-.



- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g. with a wire.

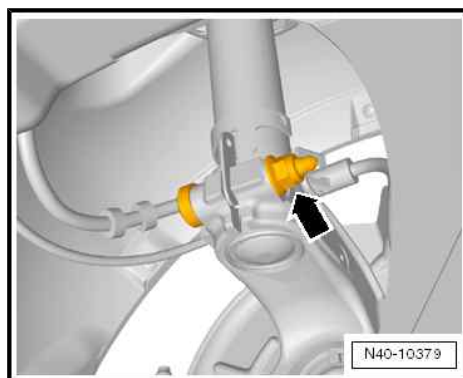


Note

- ♦ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ♦ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor*
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.", page 155.

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- Position the engine/gearbox jack e.g. -V.A.G 1383A - or -VAS6931- under the wheel-bearing housing.
- Separate the screwed connection wheel-bearing housing/suspension strut -arrow-.



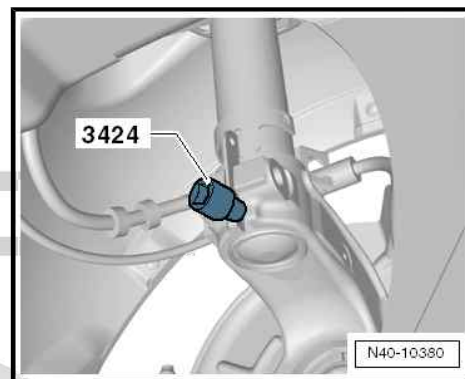
- Insert the spreader - 3424- in the slot on the wheel-bearing housing.



Note

Make sure that the spreader - 3424- is only inserted into the wheel bearing housing. Do not insert it too far otherwise you may damage the metal tabs of the suspension strut.

- Turn ratchet with spreader - 3424 - by 90° and remove ratchet.
- Pull wheel bearing housing from suspension strut.



Installing

Installation is performed in the reverse order; pay attention to the following points:

- Tighten fixing screw of drive shaft to wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

If the wheel-bearing housing was replaced, the vehicle must be aligned ⇒ [“3.3 Axle alignment”, page 309](#).

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

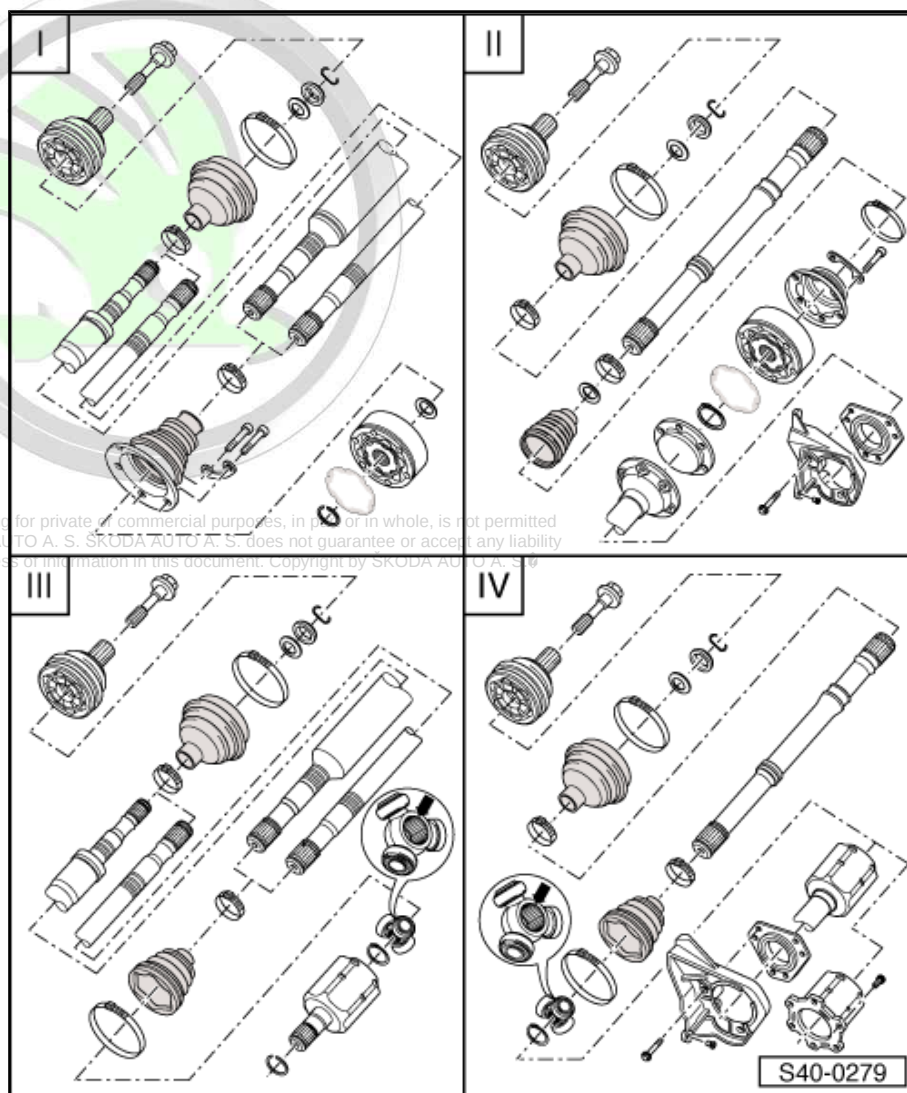
- ◆ ⇒ [“5.1 Summary of components of the wheel bearing”, page 121](#)
- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“2.1 Summary of components - steering gear”, page 356](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ ABS speed sensor ⇒ Brake systems; Rep. gr. 45
- ◆ Brake disc, brake caliper, brake carrier, protective plate ⇒ Braking systems; Rep. gr. 46

6 Drive shaft

- ⇒ [“6.1 Overview of the drive shafts”, page 130](#)
- ⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#)
- ⇒ [“6.3 Summary of components - cardan shaft”, page 132](#)
- ⇒ [“6.4 Removing and installing cardan shaft”, page 140](#)
- ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ⇒ [“6.6 Removing and installing heat shield for cardan shaft”, page 160](#)
- ⇒ [“6.7 Disassembling and assembling cardan shaft”, page 162](#)
- ⇒ [“6.8 Inspecting outer CV joint”, page 179](#)
- ⇒ [“6.9 Inspecting inner CV joint”, page 181](#)

6.1 Overview of the drive shafts

- I -
⇒ [“6.3.1 Summary of components - Drive shaft, CV joint VL90 and VL100”, page 132](#)
- II -
⇒ [“6.3.2 Summary of components - Cardan shaft CV joint VL107”, page 134](#)
- III -
⇒ [“6.3.3 Summary of components - Drive shaft with inner tripod joint AAR2600i”, page 136](#)
- IV -
⇒ [“6.3.4 Summary of components - Drive shaft with inner tripod joint AAR3300i”, page 138](#)



6.2 Designation, distinguish the diameter as specified and grease quantity for joints

Outer joint

Denomination	Diameter	Grease
RF90	81 mm	80g, grind the grease evenly in the joint
UF100	90 mm	100 g, grind the grease evenly in the joint
UF107	98 mm	120 g, grind the grease evenly in the joint from both sides
RO104	94 mm	120 g, grind the grease evenly in the joint
RO3700	100 mm	140 g, grind the grease evenly in the joint from both sides

Use the relevant grease for outer joints, assignment ⇒ Electronic Catalogue of Original Parts .

Inner joint

Denomination	Diameter	Grease
VL90	90 mm	80g, evenly in both halves of the joint
VL100	110 mm	110 g, evenly in both halves of the joint
VL107	108 mm	140 g, evenly in both halves of the joint
AAR2600i	74 mm ¹⁾	130 g, evenly in the joint
AAR3300i	77 mm ¹⁾	130 g, evenly in the joint

Use heat-resistant grease for inner joints, assignment ⇒ Electronic Catalogue of Original Parts .

¹⁾ On tripod joints, measure the dimension -A- instead of the diameter.

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6.3 Summary of components - cardan shaft

⇒ [“6.3.1 Summary of components - Drive shaft, CV joint VL90 and VL100”, page 132](#)

⇒ [“6.3.2 Summary of components - Cardan shaft CV joint VL107”, page 134](#)

⇒ [“6.3.3 Summary of components - Drive shaft with inner tripod joint AAR2600i”, page 136](#)

⇒ [“6.3.4 Summary of components - Drive shaft with inner tripod joint AAR3300i”, page 138](#)

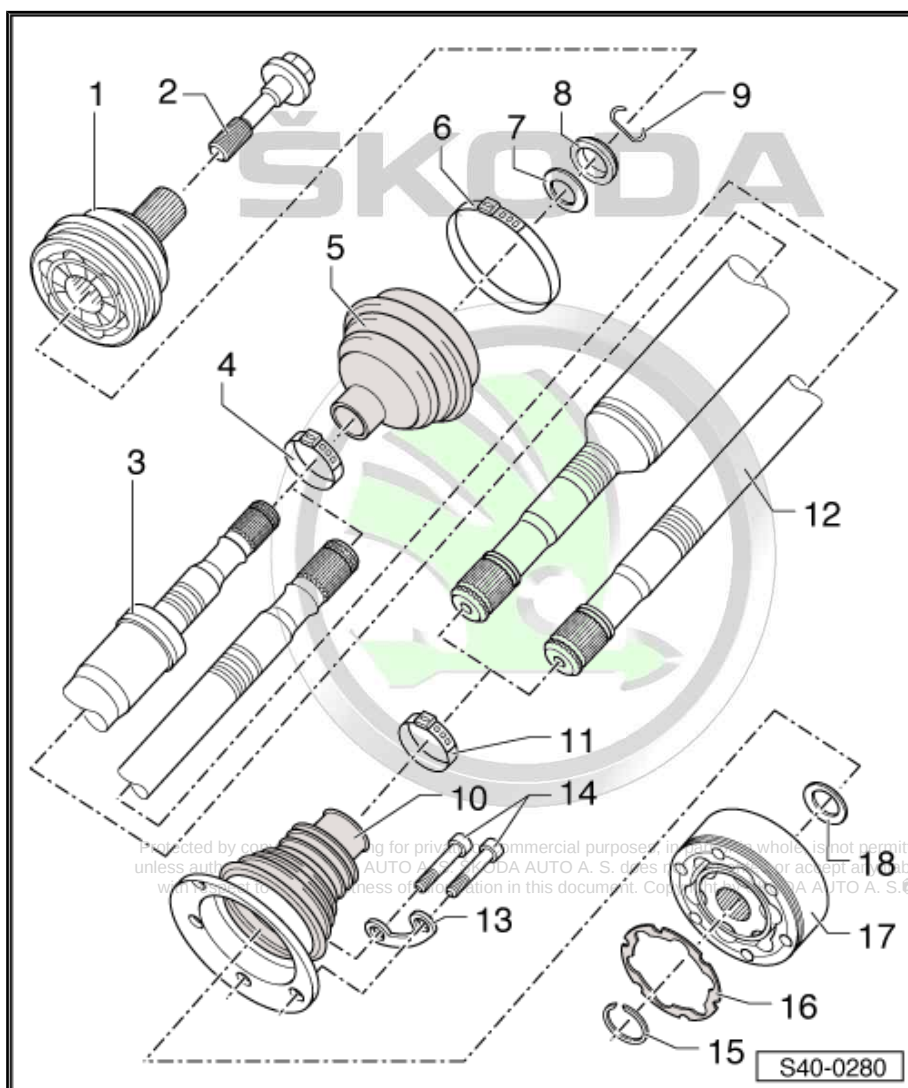
6.3.1 Summary of components - Drive shaft, CV joint VL90 and VL100

1 - Outer CV joint complete

- ☐ must be replaced completely
- ☐ Type of joint, grease quantity
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#)
- ☐ Removing
⇒ [“6.7.9 Removing outer CV joint”, page 175](#)
- ☐ installing
⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)
- ☐ Check
⇒ [“6.8 Inspecting outer CV joint”, page 179](#)

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ☐ Tightening torque
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)



3 - Drive shaft

- ☐ Removing and installing ⇒ [“6.4 Removing and installing cardan shaft”, page 140](#)

4 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the smaller diameter”, page 178](#)

5 - Collar

- ☐ inspect for tears and chafing points

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

6 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten the open warm-type clamp at the larger diameter" , page 178](#)

7 - Disc spring

- ☐ Fitting position ⇒ ["6.7.10 Installing the outer CV joint", page 176](#)

8 - Thrust ring

- ☐ Fitting position ⇒ ["6.7.10 Installing the outer CV joint", page 176](#)

9 - Circlip

- ☐ replace after each removal
- ☐ insert in the shaft groove

10 - Joint boot for inner joint

- ☐ with sheet metal cover
- ☐ without ventilation hole
- ☐ inspect for tears and chafing points
- ☐ drive off from joint with a drift
- ☐ before the installation on the joint, cover the sealing surface with -D 454 300 A2-
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

11 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten warm-type clamp" , page 168](#)

12 - Drive shaft

- ☐ Removing and installing ⇒ ["6.4 Removing and installing cardan shaft", page 140](#)

13 - Supporting plate

14 - Screw

- ☐ M8 x 48
- ☐ replace after each removal
- ☐ first of all pre-tighten all screws crosswise to 10 Nm and subsequently tighten the screws crosswise to final torque
- ☐ 40 Nm

15 - Circlip

- ☐ remove and install e.g. with circlip pliers - VW 161A-

16 - Seal

- ☐ The adhesive surface must be free of grease and oil
- ☐ replace after each removal
- ☐ Pull off protective foil and stick in joint
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

17 - Inner joint

- ☐ must be replaced completely
- ☐ Removing ⇒ ["6.7.1 Removing inner joint VL90 and VL100", page 162](#)
- ☐ installing ⇒ ["6.7.5 Installing inner joint VL90 and VL100", page 166](#)
- ☐ Check ⇒ ["6.9 Inspecting inner CV joint", page 181](#)

18 - Disc spring

- ☐ Fitting position ⇒ [Fig. "Fitting position of the disc spring at inner joint" , page 166](#)

6.3.2 Summary of components - Cardan shaft CV joint VL107

1 - Outer CV joint complete

- ☐ must be replaced completely
- ☐ Type of joint, grease quantity
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#)
- ☐ Removing
⇒ [“6.7.9 Removing outer CV joint”, page 175](#)
- ☐ installing
⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)
- ☐ Check
⇒ [“6.8 Inspecting outer CV joint”, page 179](#)

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ☐ Tightening torque
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)

3 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the smaller diameter””, page 178](#)

4 - Collar

- ☐ inspect for tears and chafing points
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

5 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the larger diameter””, page 178](#)

6 - Disc spring

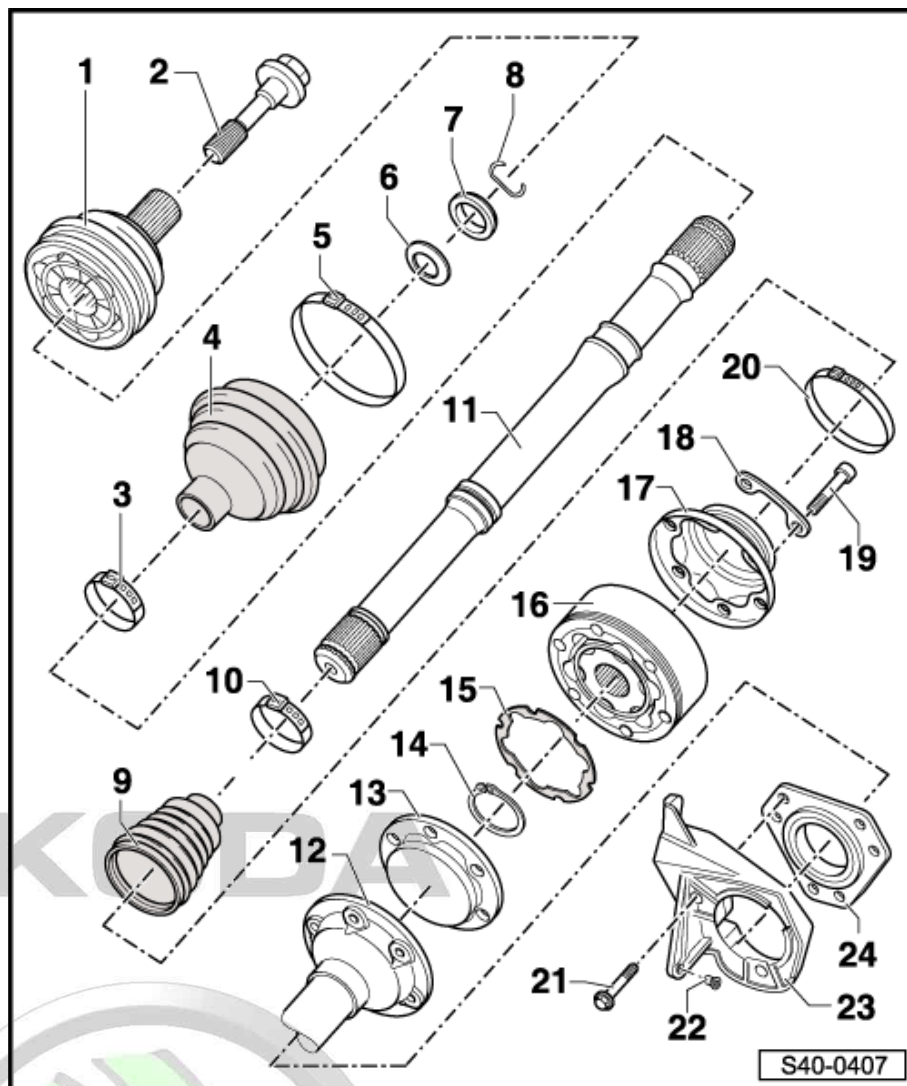
- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

7 - Thrust ring

- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

8 - Circlip

- ☐ replace after each removal



- ☐ insert in the shaft groove

9 - Joint boot for inner joint

- ☐ without ventilation hole
- ☐ inspect for tears and chafing points
- ☐ Assignment ➔ Electronic Catalogue of Original Parts

10 - Clamp

- ☐ replace after each removal
- ☐ tensioning ➔ [Fig. "Tighten the open warm-type clamp at the smaller diameter", page 171](#)

11 - Drive shaft

- ☐ Removing and installing ➔ ["6.4 Removing and installing cardan shaft", page 140](#)

12 - Intermediate shaft

- ☐ right vehicle side
- ☐ Removing and installing ➔ ["6.4.5 Removing and installing intermediate shaft", page 155](#)
- ☐ repairing ➔ ["6.7.11 Repairing intermediate shaft", page 178](#)

13 - Cover

- ☐ replace after each removal
- ☐ drive out of the CV joint with a drift
- ☐ Removing ➔ [Fig. "Remove cover for inner joint", page 164](#)

14 - Circlip

- ☐ removing and installing, e.g. with circlip pliers - VW 161 A-

15 - Seal

- ☐ The adherend must be free of grease and oil!
- ☐ replace after each removal
- ☐ Pull off protective foil and stick in joint
- ☐ Assignment ➔ Electronic Catalogue of Original Parts

16 - Inner joint

- ☐ must be replaced completely
- ☐ Grease quantity
➔ ["6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131](#)
- ☐ Removing ➔ ["6.7.2 Remove inner joint VL107", page 163](#)
- ☐ installing ➔ ["6.7.6 Install inner joint VL107", page 168](#)
- ☐ Check ➔ ["6.9 Inspecting inner CV joint", page 181](#)

17 - Cap

- ☐ carefully remove with a drift
- ☐ before the installation on the joint, cover the sealing surface with -D 454 300 A2-
- ☐ The adherend must be free of grease and oil!

18 - Supporting plate

19 - Screw

- ☐ M10 x 52
- ☐ replace after each removal
- ☐ first of all pre-tighten all screws crosswise to 10 Nm and subsequently tighten the screws crosswise to final torque
- ☐ 70 Nm

20 - Clamp

- ☐ replace after each removal
- ☐ tensioning ➔ [Fig. "Tighten the open warm-type clamp at the larger diameter", page 170](#)

21 - Screw

- ☐ 20 Nm



22 - Screw

- ☐ first tighten to 5 Nm and then tighten to final torque
- ☐ 35 Nm

23 - Bearing bracket

24 - Bearings

- ☐ pressing in and pressing out ⇒ [“6.7.11 Repairing intermediate shaft”, page 178](#)

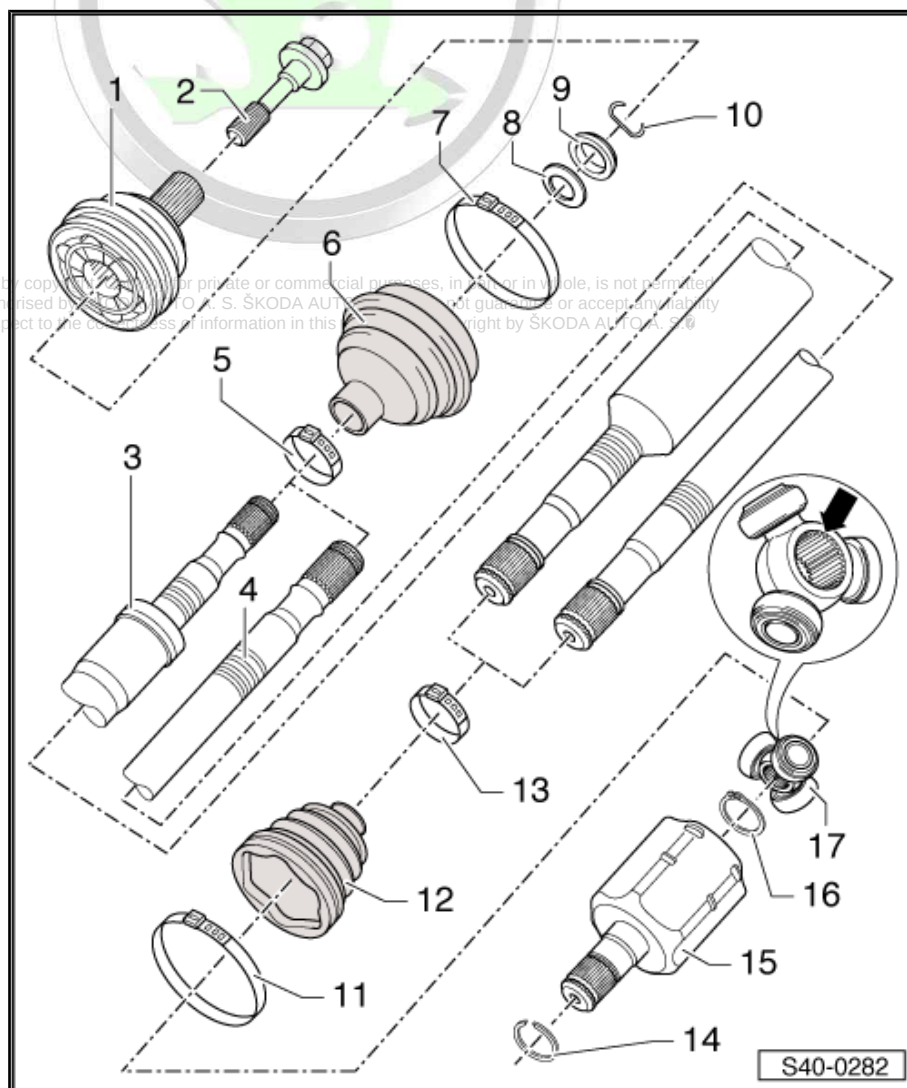
6.3.3 Summary of components - Drive shaft with inner tripod joint AAR2600i

1 - Outer CV joint complete

- ☐ must be replaced completely
- ☐ Type of joint, grease quantity
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#)
- ☐ Removing
⇒ [“6.7.9 Removing outer CV joint”, page 175](#)
- ☐ installing
⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)
- ☐ Check
⇒ [“6.8 Inspecting outer CV joint”, page 179](#)

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ☐ Tightening torque
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)



3 - Drive shaft

- ☐ removing and installing with wedge - T10161-
⇒ [“6.4.2 Removing and installing cardan shaft with Keil T10161 T10161, inserted in gearbox, tripod joint AAR2600i”, page 144](#)
- ☐ Remove and install with extractor for drive shafts - T10382-
⇒ [“6.4.3 PTO shaft with extractor for drive shafts T10382, inserted in the gearbox, removing and installing tripod joint AAR2600i”, page 147](#)

4 - Drive shaft

- ☐ removing and installing with wedge - T10161-
⇒ [“6.4.2 Removing and installing cardan shaft with Keil T10161 T10161, inserted in gearbox, tripod joint AAR2600i”, page 144](#)
- ☐ Remove and install with extractor for drive shafts - T10382-
⇒ [“6.4.3 PTO shaft with extractor for drive shafts T10382, inserted in the gearbox, removing and installing tripod joint AAR2600i”, page 147](#)

5 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. ““Tighten the open warm-type clamp at the smaller diameter””, page 178](#)

6 - Joint boot for inner joint

- ☐ inspect for tears and chafing points
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

7 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. ““Tighten the open warm-type clamp at the larger diameter””, page 178](#)

8 - Disc spring

- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

9 - Thrust ring

- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

10 - Circlip

- ☐ replace after each removal
- ☐ insert in the shaft groove

11 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. ““Tighten the open warm-type clamp at the larger diameter””, page 172](#)

12 - Joint boot for tripod joint

- ☐ inspect for tears and chafing points
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

13 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. ““Tighten the open warm-type clamp at the smaller diameter””, page 173](#)

14 - Circlip

- ☐ replace after each removal

15 - Driver

16 - Circlip

- ☐ replace after each removal
- ☐ insert with circlip pliers into the groove of the shaft

17 - Tripod spider with rollers

the chamfer -arrow- points towards the cardan shaft serration

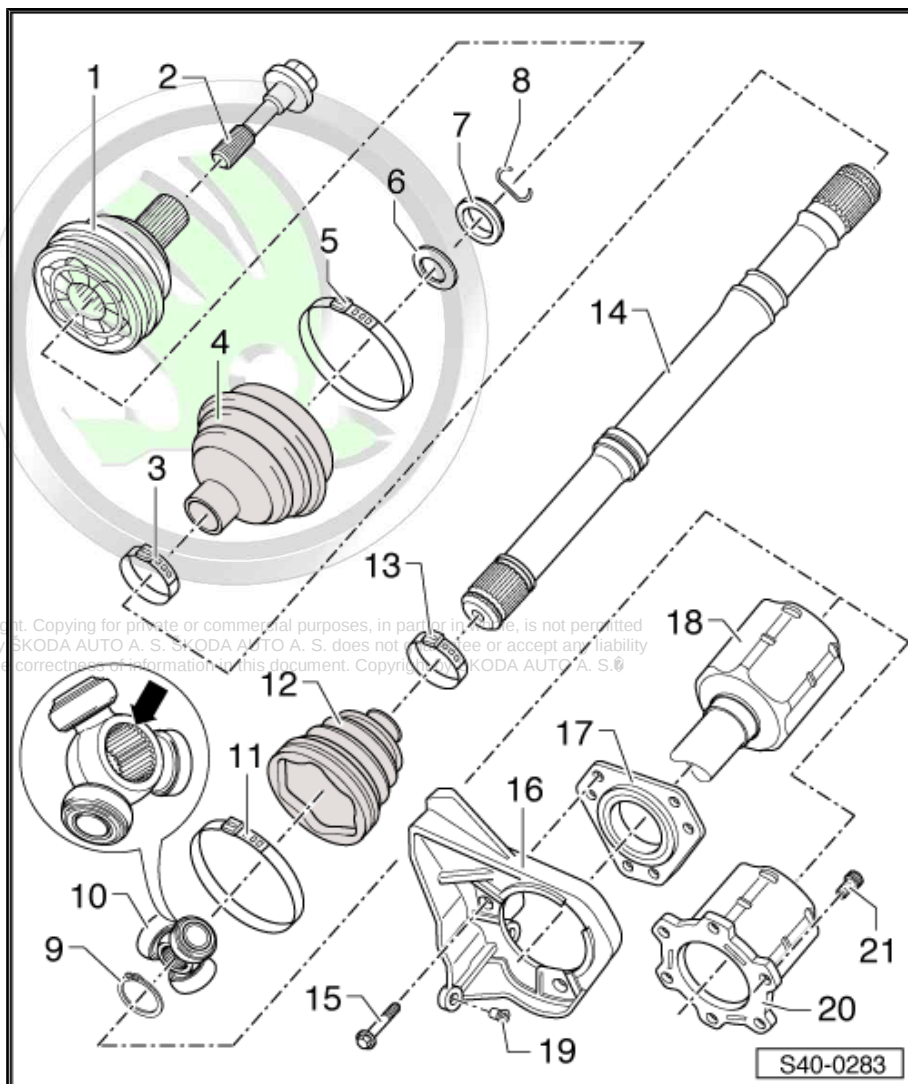
6.3.4 Summary of components - Drive shaft with inner tripod joint AAR3300i

1 - Outer CV joint complete

- ☐ must be replaced completely
- ☐ Type of joint, grease quantity
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#)
- ☐ Removing
⇒ [“6.7.9 Removing outer CV joint”, page 175](#)
- ☐ installing
⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)
- ☐ Check
⇒ [“6.8 Inspecting outer CV joint”, page 179](#)

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ☐ Tightening torque
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)



3 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the smaller diameter””, page 178](#)

4 - Joint boot for inner joint

- ☐ inspect for tears and chafing points
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

5 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the larger diameter””, page 178](#)

6 - Disc spring

- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

7 - Thrust ring

- ☐ Fitting position ⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

8 - Circlip

- ☐ replace after each removal

- ☐ insert in the shaft groove

9 - Circlip

- ☐ replace after each removal
- ☐ insert with circlip pliers into the groove of the shaft

10 - Tripod spider with rollers

- ☐ the chamfer -arrow- points towards the cardan shaft serration

11 - Clamp

- ☐ replace after each removal
- ☐ tighten, for example, using hose binding claw - V.A.G 1275-

12 - Joint boot for tripod joint

- ☐ inspect for tears and chafing points
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

13 - Clamp

- ☐ replace after each removal
- ☐ tighten, for example, using hose binding claw - V.A.G 1275-

14 - Drive shaft

15 - Screw

- ☐ 20 Nm

16 - Bearing bracket

17 - Bearings

18 - Joint part with intermediate shaft

- ☐ for the right vehicle side

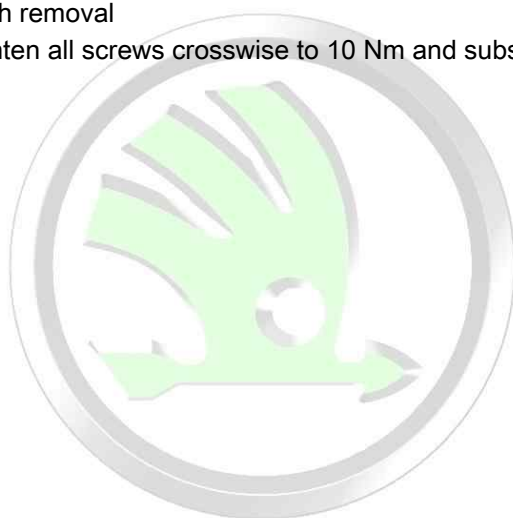
19 - Screw

- ☐ first tighten to 5 Nm and then tighten to final torque
- ☐ 35 Nm

20 - Driver

21 - Screw

- ☐ replace after each removal
- ☐ first of all pre-tighten all screws crosswise to 10 Nm and subsequently tighten the screws crosswise to final torque
- ☐ 70 Nm





6.4 Removing and installing cardan shaft

⇒ [“6.4.1 Removing and installing cardan shaft, CV joint VL90, VL100 and VL107”, page 140](#)

⇒ [“6.4.2 Removing and installing cardan shaft with Keil T10161 T10161, inserted in gearbox, tripod joint AAR2600i”, page 144](#)

⇒ [“6.4.3 PTO shaft with extractor for drive shafts T10382 , inserted in the gearbox, removing and installing tripod joint AAR2600i”, page 147](#)

⇒ [“6.4.4 Removing and installing drive shaft with inner tripod joint AAR3300i”, page 151](#)

⇒ [“6.4.5 Removing and installing intermediate shaft”, page 155](#)

⇒ [“6.4.6 Push the cardan shaft out of the wheel hub.”, page 155](#)

6.4.1 Removing and installing cardan shaft, CV joint VL90, VL100 and VL107



WARNING

During disassembly and assembly work on the vehicle, the cardan shafts must not hang down loosely and through overstretching rest against the stop in the joints.

Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
 - ◆ *Install an outer joint instead of the cardan shaft.*
 - ◆ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Removing heat shield for the cardan shaft (if present)
⇒ [“6.6 Removing and installing heat shield for cardan shaft”, page 160](#).

Vehicles with intermediate shaft

- Remove cardan shaft from the intermediate shaft and attach to the body e.g. with a wire.

i Note

The cardan shaft must not hang down, otherwise the inner joint will be damaged.

Vehicles without intermediate shaft

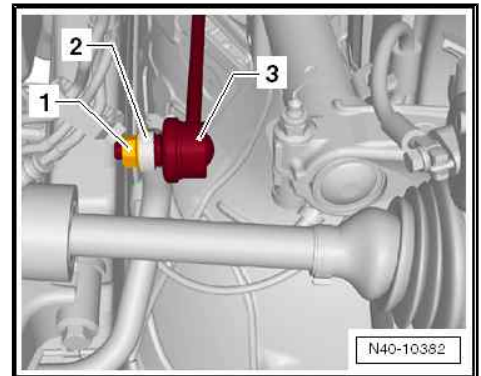
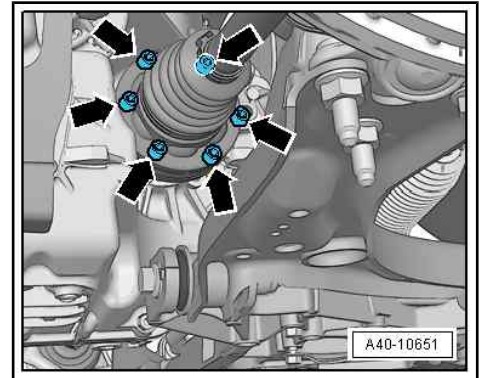
- Remove cardan shaft from gearbox -arrows- and attach to the body e.g. with a wire.

i Note

The cardan shaft must not hang down, otherwise the inner joint will be damaged.

Continued for all vehicles

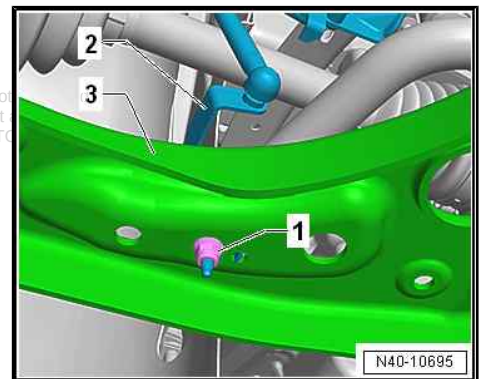
- Unscrew nut -1- from coupling rod -3-.
- Pull out coupling rod -3- from the anti-roll bar -2-.



Vehicles with vehicle level sender

- Unscrew nut -1-.
- Undo holder -2- from the front left vehicle level sensor - G78- and front right vehicle level sender - G289- from the suspension link -3-.

Continued for all vehicles



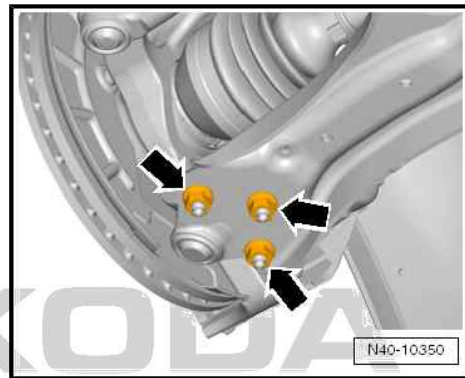


- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



Note

- ◆ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ◆ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
[page 155](#).*



- Remove cardan shaft from the vehicle.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Remove possible paint and/or corrosion residue from the thread/the serration of the outer joint
- Before assembly of the outer joint into the wheel hub, thinly coat the teeth on the outer joint with assembly paste ⇒ Electronic Catalogue of Original Parts .
- Guide outer joint into wheel hub splines as far as possible.

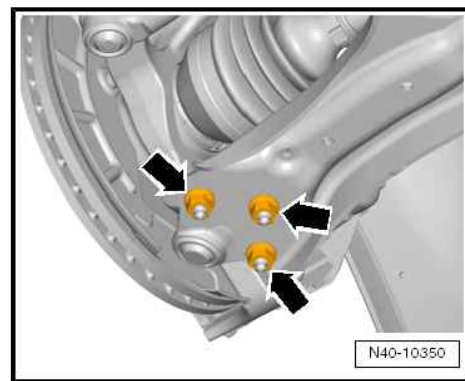
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- Screw steering joint to the track control arm -arrows-.



Note

- ◆ *Make sure the steering joint boot is neither damaged nor twisted.*
- ◆ *Use new nuts.*
- Fit the inner joint of the PTO shaft and tighten new bolts cross-wise in 2 stages with the appropriate tightening torque.
- ◆ ⇒ [“6.3.1 Summary of components - Drive shaft, CV joint VL90 and VL100”, page 132](#)
- ◆ ⇒ [“6.3.2 Summary of components - Cardan shaft CV joint VL107”, page 134](#)
- Tighten fixing screw of drive shaft to wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“6.3.1 Summary of components - Drive shaft, CV joint VL90 and VL100”, page 132](#)
- ◆ ⇒ [“6.3.2 Summary of components - Cardan shaft CV joint VL107”, page 134](#)
- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ◆ ⇒ [“6.6 Removing and installing heat shield for cardan shaft”, page 160](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50



6.4.2 Removing and installing cardan shaft with Keil - T10161- T10161, inserted in gearbox, tripod joint AAR2600i

Special tools and workshop equipment required

- ♦ Wedge - T10161-



WARNING

During disassembly and assembly work on the vehicle, the cardan shafts must not hang down loosely and through overstretching rest against the stop in the joints.

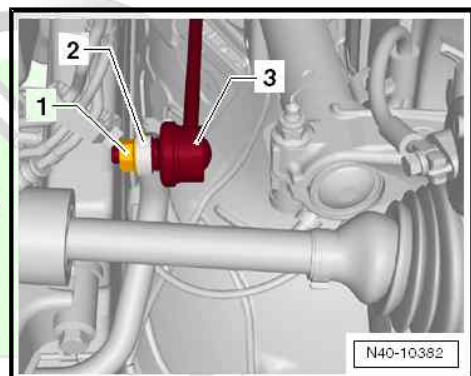
Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#) .



Note

- ♦ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ♦ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ♦ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ♦ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ♦ *Install an outer joint instead of the cardan shaft.*
- ♦ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Unscrew nut -1- from coupling rod -3-.
- Pull out coupling rod -3- from the anti-roll bar -2-.



Vehicles with vehicle level sender

- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder -G78- from the wishbone -3-.

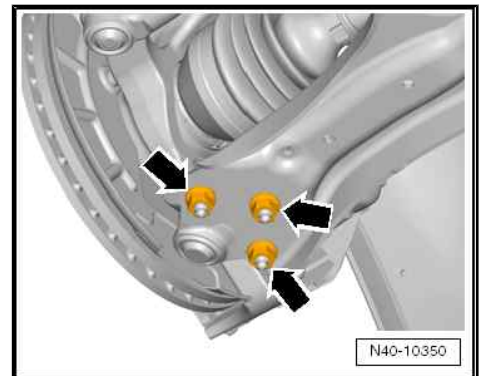
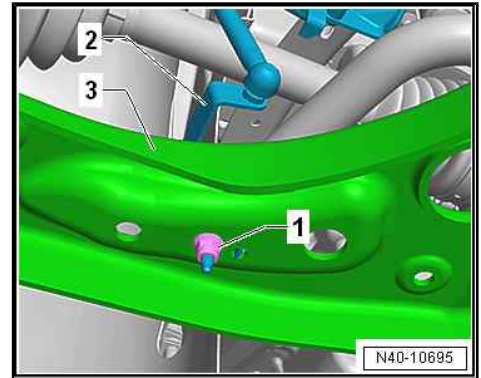
Continued for all vehicles

- Remove drive shaft protector from the engine (if present).
- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



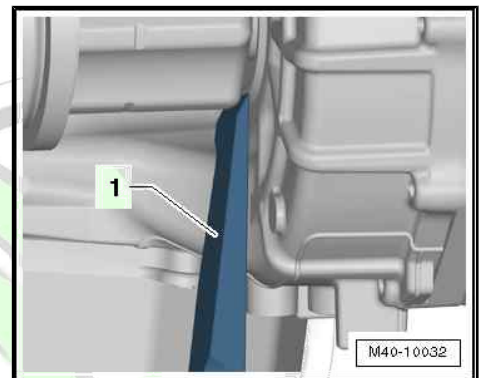
Note

- ◆ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ◆ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
[page 155](#) .*



For left cardan shaft

- Insert wedge - T10161- - 1- between gearbox housing and tripod joint.
- Press inner joint out of gearbox by striking wedge - T10161- with a rubber hammer.
- Remove cardan shaft from the vehicle.





For right cardan shaft

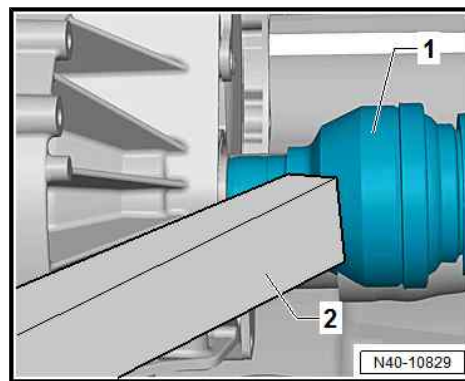
- Drive off the left cardan shaft from the rigid shaft of the gearbox -1-, e.g. with a wooden block -2-.
- Remove cardan shaft from the vehicle.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Fit new retaining ring into groove of joint pin.
- Mesh outer and inner splines of joint body and gearbox.
- Slide cardan shaft into joint body to stop by hand.
- Now »suddenly« push joint body into gearbox.

The joint travel can be used for the »sudden push«. Do not, however, pull the cardan shaft too far out of the joint body.



Note

Never use a hammer or other driving tools.

- Check that the cardan shaft is securely seated in the gearbox by pulling the joint body against the resistance of retaining ring.



Note

Only pull on the joint part, not on the cardan shaft.

- Guide outer joint into wheel hub splines as far as possible.



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- Tighten the nuts -arrows-.



Note

Use new nuts.

- Tighten fixing screw of drive shaft to wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#) .



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

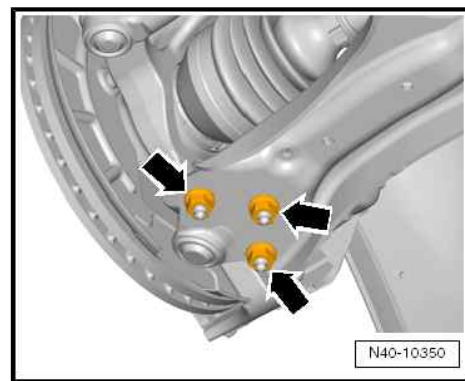
- ◆ ⇒ ["6.3.3 Summary of components - Drive shaft with inner tripod joint AAR2600i", page 136](#)
- ◆ ⇒ ["2.1 Assembly overview - subframe, aluminium subframe", page 10](#)
- ◆ ⇒ ["3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive", page 58](#)
- ◆ ⇒ ["3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive", page 62](#)
- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#)
- ◆ ⇒ ["6.6 Removing and installing heat shield for cardan shaft", page 160](#)
- ◆ ⇒ ["1.1 Summary of components - vehicle level sender front", page 293](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

6.4.3 PTO shaft with extractor for drive shafts - T10382- , inserted in the gearbox, removing and installing tripod joint AAR2600i

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Special tools and workshop equipment required

- ◆ Extractor for drive shafts - T10382 -
- ◆ Multi-purpose tool - MP3-419-
- ◆ Tensioning strap - T10038-
- ◆ Puller plate - T10382/1-





- ◆ Spindle - T10382/2-
- ◆ Cross member - T10382/3 -

Removing



WARNING

During disassembly and assembly work on the vehicle, the cardan shafts must not hang down loosely and through overstretching rest against the stop in the joints.

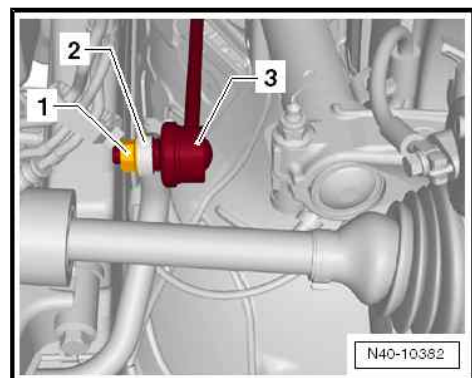
- Unscrew fixing screw of drive shaft at wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 158](#).



Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*

- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Unscrew nut -1- from coupling rod -3-.
- Pull out coupling rod -3- from the anti-roll bar -2-.

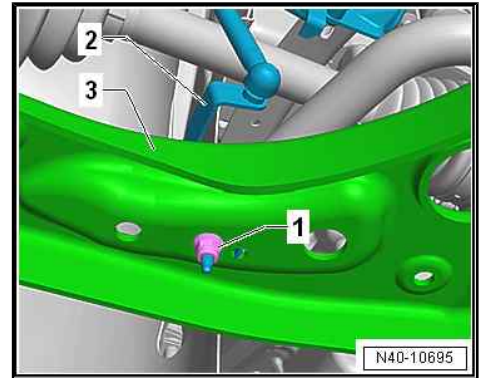


Vehicles with vehicle level sender

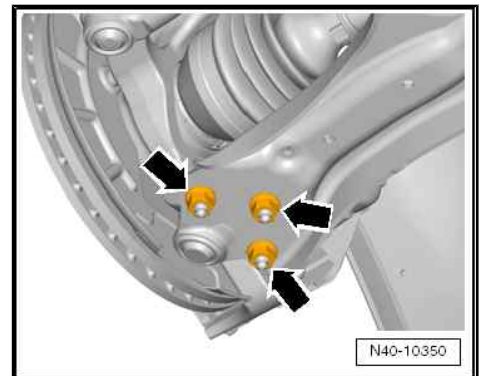
- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.

Continued for all vehicles

- Remove drive shaft guard (if present).



- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.

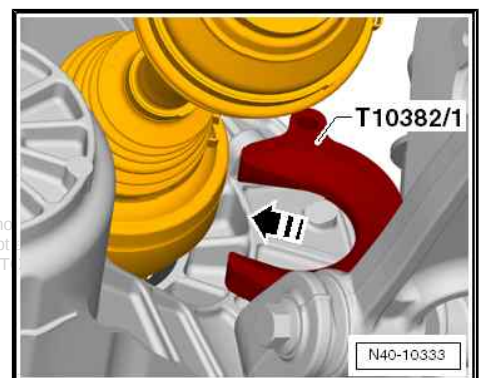


Note

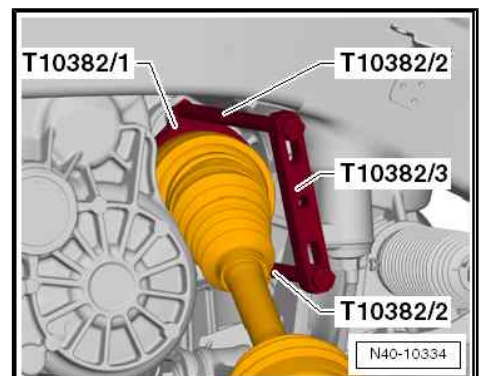
- ◆ The cardan shaft must not hang down, otherwise the inner joint will be damaged.
- ◆ If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
page 155.

Left drive shaft

- Tighten the suspension strut with tensioning strap - T10038- to the body at the rear so that the extractor for drive shafts - T10382 - can be fitted in parallel to the driveshaft.
- Fit the puller plate - T10382/1- behind the inner joint -arrow- so that the recess points to the spindles - T10382/2-.



- Connect spindles - T10382/2- and cross members - T10382/3 - with puller plate - T10382/1-.
- Connect multi-purpose tool - MP3-419- to cross member - T10382/3-.
- Pull the drive shaft out of the gearbox by tapping the multi-purpose tool - MP3-419-.

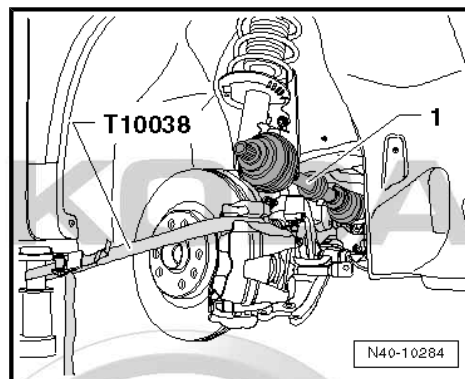


Right drive shaft

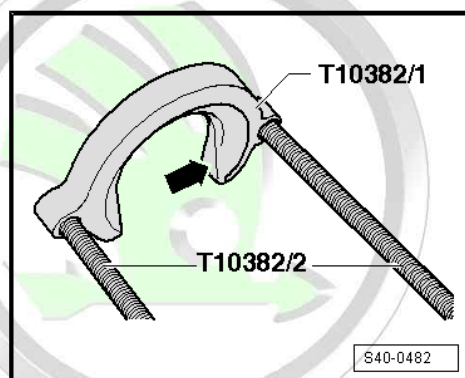
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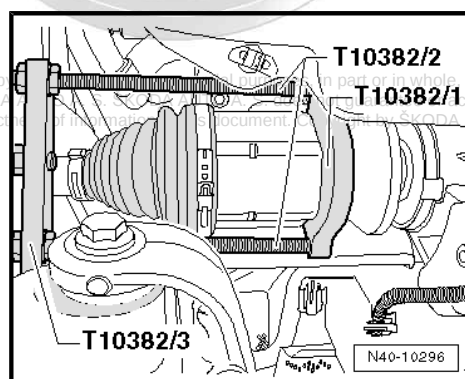
- Tighten the suspension strut with tensioning strap - T10038- to the body at the rear so that the extractor for drive shafts - T10382 - can be fitted in parallel to the driveshaft.



- Adjust the puller plate - T10382/1- so that the recess -arrow- points to the spindles - T10382/2- .



- Position the extractor for drive shafts - T10382 - behind the inner joint.
- Connect multi-purpose tool - MP3-419- to cross member T10382/3 - .
- Pull the drive shaft out of the gearbox by tapping the multi-purpose tool - MP3-419- .



Installing

Installation is performed in the reverse order, pay attention to the following points:

- Fit new retaining ring into groove of joint pin.
- Mesh outer and inner splines of joint body and gearbox.
- Slide cardan shaft into joint body to stop by hand.
- Now »suddenly« push joint body into gearbox.

The joint travel can be used for the »sudden push«. Do not, however, pull the cardan shaft too far out of the joint body.



Note

Never use a hammer or other driving tools.

- Check that the cardan shaft is securely seated in the gearbox by pulling the joint body against the resistance of retaining ring.



Note

Only pull on the joint part, not on the cardan shaft.

- Guide outer joint into wheel hub splines as far as possible.

- Tighten the nuts -arrows-.



Note

Use new nuts.

- Tighten fixing screw of drive shaft to wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

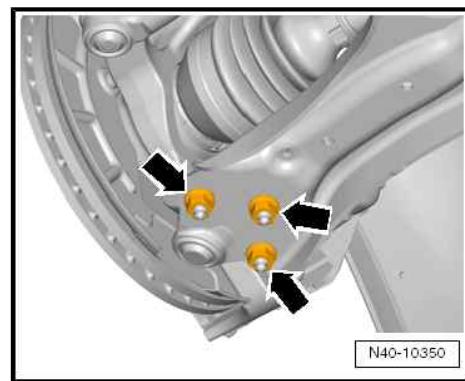
- ◆ ⇒ [“6.3.3 Summary of components - Drive shaft with inner tripod joint AAR2600i”, page 136](#)
- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ◆ ⇒ [“6.6 Removing and installing heat shield for cardan shaft”, page 160](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

6.4.4 Removing and installing drive shaft with inner tripod joint AAR3300i



WARNING

During disassembly and assembly work on the vehicle, the cardan shafts must not hang down loosely and through overstretching rest against the stop in the joints.





Removing

- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”](#),
[page 158](#)



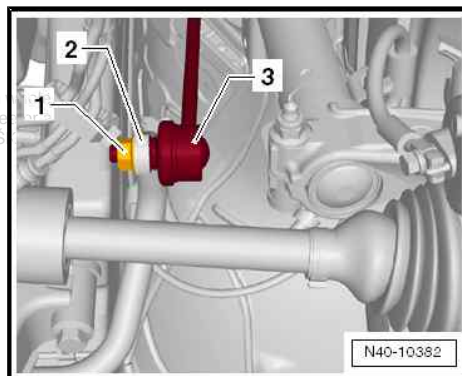
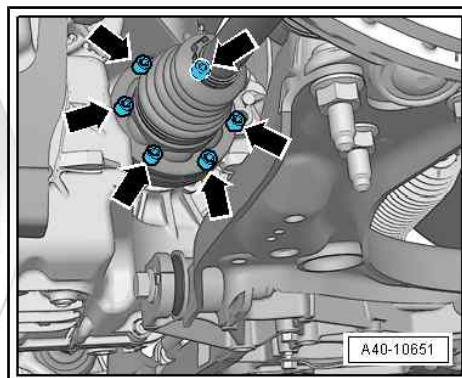
Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Remove drive shaft protector from the engine (if present).
- Remove cardan shaft from gearbox -arrows- and attach to the body e.g. with a wire.



Note

The cardan shaft must not hang down, otherwise the inner joint will be damaged.



- Unscrew nut -1- from coupling rod -3-.
- Pull out coupling rod -3- from the anti-roll bar -2-.

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Vehicles with vehicle level sender

- Unscrew nut -1-.
- Undo holder -2- from the front left vehicle level sensor - G78- and front right vehicle level sender - G289- from the suspension link -3-.

Continued for all vehicles

- Release fixing nuts -arrows-.
- Unhook steering joint out of the suspension link.
- Swivel out the wheel-bearing housing with the suspension strut and simultaneously pull the cardan shaft out of the wheel hub and attach it to the body e.g with a wire.



Note

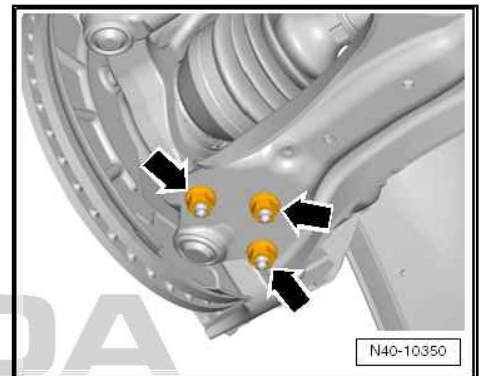
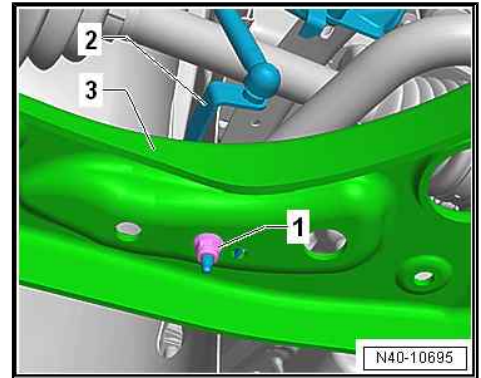
- ♦ *The cardan shaft must not hang down, otherwise the inner joint will be damaged.*
- ♦ *If the cardan shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.4.6 Push the cardan shaft out of the wheel hub.",
[page 155](#).*

- Remove cardan shaft from the vehicle.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Remove possible paint and/or corrosion residue from the thread/the serration of the outer joint
- Before assembly of the outer joint into the wheel hub, thinly coat the teeth on the outer joint with assembly paste ⇒ Electronic Catalogue of Original Parts .
- Guide outer joint into wheel hub splines as far as possible.



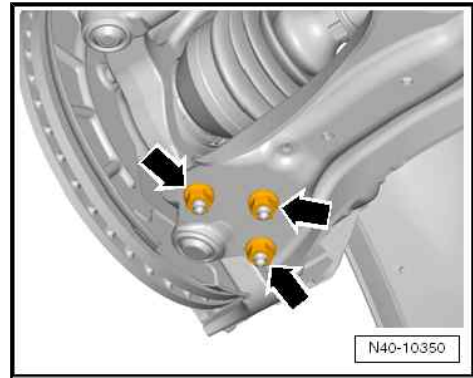


- Screw steering joint to the track control arm -arrows-.



Note

- ◆ *Make sure the steering joint boot is neither damaged nor twisted.*
- ◆ *Use new nuts.*
- Fit the inner joint of the PTO shaft and tighten new bolts cross-wise in 2 stages with the appropriate tightening torque
⇒ [“6.3.4 Summary of components - Drive shaft with inner tripod joint AAR3300i”, page 138](#) .
- Tighten fixing screw of drive shaft to wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#) .



Note

When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“6.3.4 Summary of components - Drive shaft with inner tripod joint AAR3300i”, page 138](#)
- ◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#)
- ◆ ⇒ [“6.6 Removing and installing heat shield for cardan shaft”, page 160](#)
- ◆ ⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

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6.4.5 Removing and installing intermediate shaft

Removing

- Remove drive shaft on the right side
⇒ [“6.4.1 Removing and installing cardan shaft, CV joint VL90, VL100 and VL107”, page 140](#) .
- Remove the nuts -arrows- from the bearing bracket.
- Pull off intermediate shaft from gearbox.

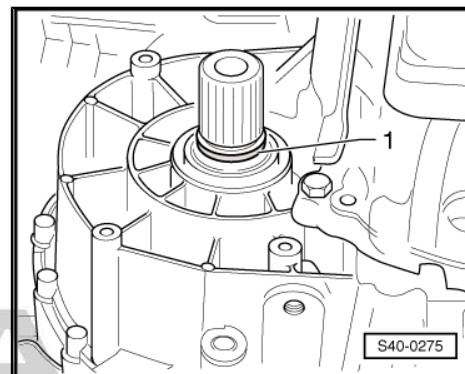
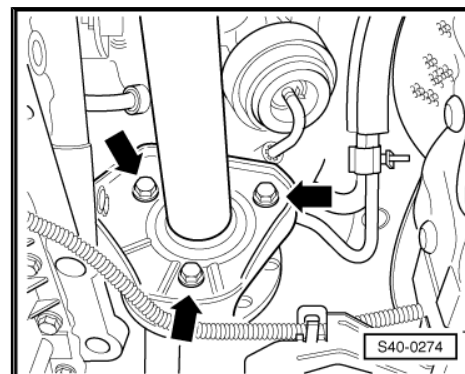
Repairing intermediate shaft

⇒ [“6.7.11 Repairing intermediate shaft”, page 178](#) .

Installing

Installation is performed in the reverse order, pay attention to the following points:

- First replace the gasket ring -1- on the gearbox.



- Push the rigid shaft as far as possible onto the gearbox shaft until the bearing -2- rests »free of gap« on the bracket -1-.

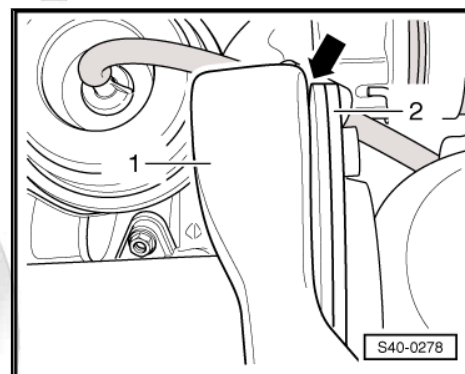
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“6.3.2 Summary of components - Cardan shaft CV joint VL107”, page 134](#)



6.4.6 Push the cardan shaft out of the wheel hub.

Special tools and workshop equipment required

- ◆ Extractor - T10520A-



Note

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If the cardan shaft cannot be pulled out of the wheel hub, it can be pressed out using the extractor - T10520A- .



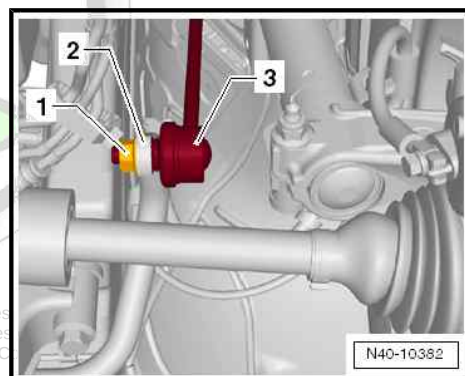
- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 158](#).



Note

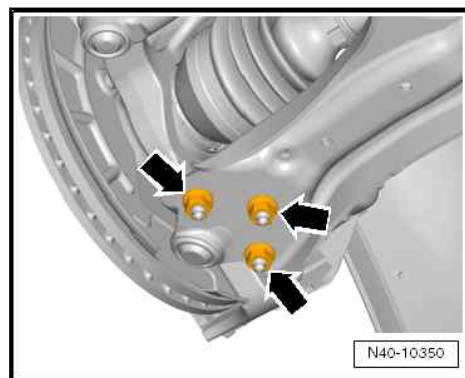
- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
 - ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
 - ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
 - ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If the vehicle is moving in spite of this, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten outer joint to 120 Nm.*
- Remove wheel.
 - Remove noise insulation ⇒ Body Work; Rep. gr. 50.
 - Unscrew nut -1- from coupling rod -3-.
 - Pull out coupling rod -3- from the anti-roll bar -2-.
 - For vehicles fitted with automatic headlight range control, remove the front left vehicle level sensor - G78-
⇒ [“1.3 Removing and installing front vehicle level encoder G78”, page 295](#).

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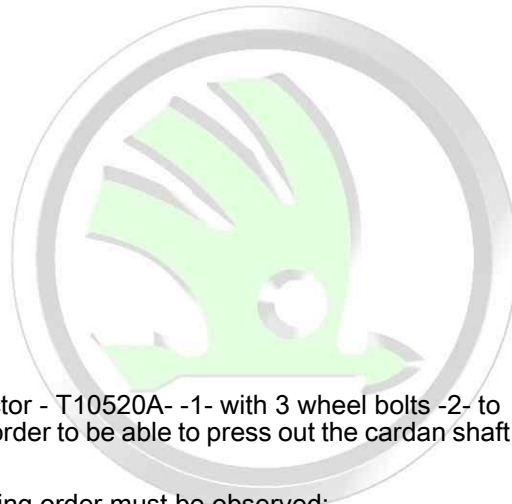
- Release fixing nuts -arrows-.
- Remove suspension link from suspension link of the wheel bearing housing.
- Press out drive shaft with extractor - T10520A-.

Process for pressing out with extractor - T10520A-



i Note

Before using extractor - T10520A- , make sure that the thrust piece -1- is inserted.



- Secure the extractor - T10520A- -1- with 3 wheel bolts -2- to the wheel hub in order to be able to press out the cardan shaft -3-.

Therefore, the following order must be observed:

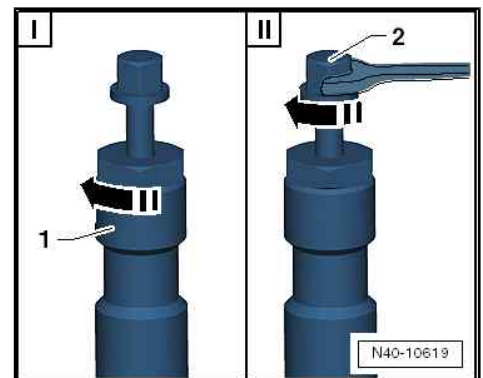
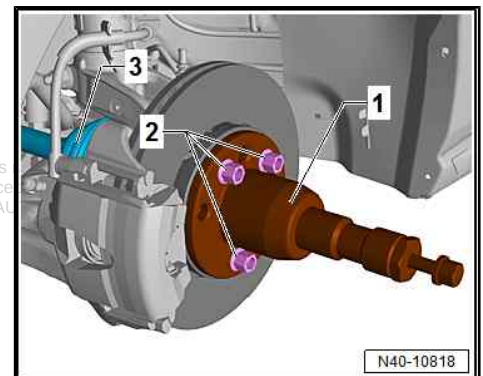
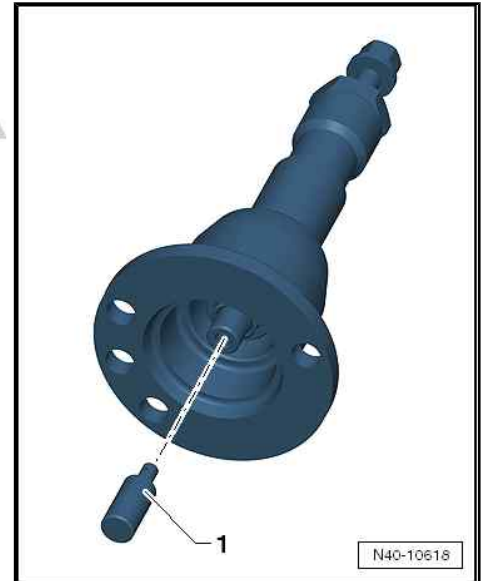
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- Tighten the knurled nut -1- by hand.
- Turn the screw -2- and press out the cardan shaft from the wheel hub.

i Note

At the end of the procedure or for pressing out cardan shaft further the spindle must be moved to its original position in order to deploy the hydraulic force!

- Remove cardan shaft from wheel hub.





6.5 Loosen and tighten cardan shaft screwed connection



Note

- ◆ If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e. the vehicle must not stand on its wheels.
- ◆ If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.
- ◆ If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.

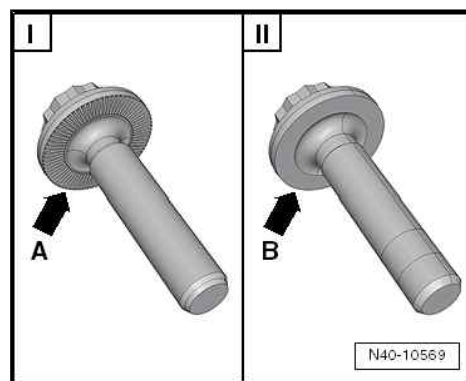
Distinguishing feature of twelve-sided bolts

The twelve-sided bolts differ in the surface area -arrow A- and -arrow B-.

- ◆ I - Twelve-sided bolt with serration - -arrow A-
- ◆ II - Twelve-sided bolt without serration - -arrow B-

Remove twelve-sided bolt

- Remove wheel trim cap, for light-alloy wheels remove the cap on the removed wheel (depending on version) ⇒ Wheels, Tyres; Rep. gr. 44 .



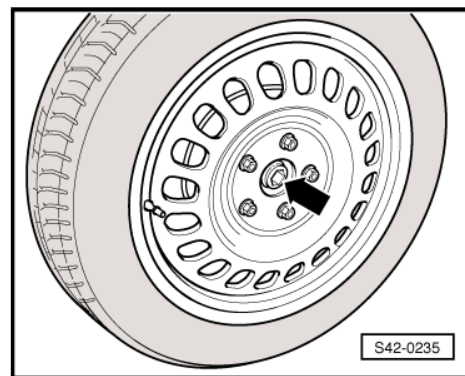
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- Slacken the screw -arrow- by max. 90° on the vehicle while it is standing on its wheels, otherwise the wheel bearing may be damaged.
- Raise the vehicle until the wheels are fully off the ground.
- Depress brake pedal (assistance of second mechanic required).
- Unscrew plug -arrow-.

Install twelve-sided bolt

- Always install a new screw.



Note

- ◆ Assign screw via the ➔ *Electronic Catalogue of Original Parts*.
- ◆ *When tightening the fixing screw of the drive shaft, the wheel must be raised until it is fully off the ground, otherwise the wheel bearing can be damaged.*

Twelve-sided screw - WHT 002 795- with serration

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 70 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 90°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

Twelve head screw - WHT 005 437- without teeth (black)

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 200 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 180°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

12-point screw - WHT 005 437 A- without teeth (silver)

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 200 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 90°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

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Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ ⇒ "1.2 Tightening torque of the wheel screws", page 301

6.6 Removing and installing heat shield for cardan shaft

⇒ "6.6.1 Removing and installing the heat shield for cardan shaft, heat shield fastened with plate", page 160

⇒ "6.6.2 Removing and installing heat shield for propshaft, protective cover secured with 2 pipe nuts", page 160

⇒ "6.6.3 Removing and installing heat shield for propshaft, protective cover secured with 3 pipe nuts", page 161

6.6.1 Removing and installing the heat shield for cardan shaft, heat shield fastened with plate

Removing

- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Remove screws -1-.
- Remove heat shield for driveshaft

Installing

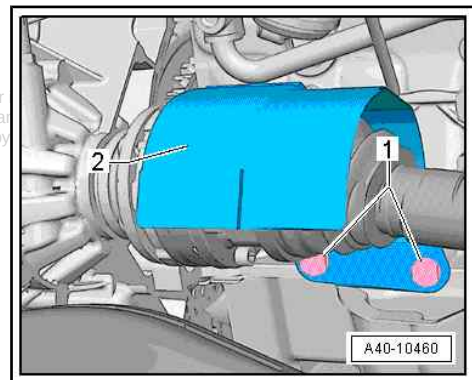
Installation is carried out in the reverse order.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



Component	Tightening torque
Screws M10 x 20	25 Nm
Screws M8 x 20	20 Nm

♦ Noise insulation ⇒ Body work assembly; Rep. gr. 50

6.6.2 Removing and installing heat shield for propshaft, protective cover secured with 2 pipe nuts

Removing

- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

- Unscrew the nuts -1-.
- Remove heat shield for driveshaft

Installing

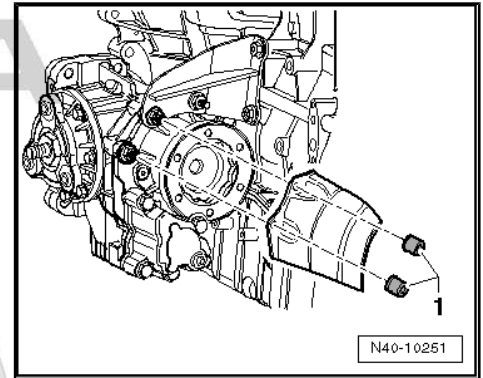
Installation is carried out in the reverse order.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



Component	Tightening torque
Nuts of the heat shield for cardan shaft	20 Nm

◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

6.6.3 Removing and installing heat shield for propshaft, protective cover secured with 3 pipe nuts

Removing

- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .
- Unscrew the nuts -1-.
- Remove heat shield for driveshaft

Installing

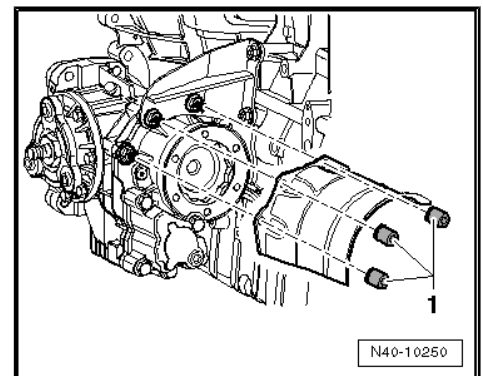
Installation is carried out in the reverse order.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



Component	Tightening torque
Nuts of the heat shield for cardan shaft	20 Nm

◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50

6.7 Disassembling and assembling cardan shaft

⇒ [“6.7.1 Removing inner joint VL90 and VL100”, page 162](#)

⇒ [“6.7.2 Remove inner joint VL107”, page 163](#)

⇒ [“6.7.3 Remove inner joint AAR2600i”, page 164](#)

⇒ [“6.7.4 Remove inner joint AAR3300i”, page 165](#)

⇒ [“6.7.5 Installing inner joint VL90 and VL100”, page 166](#)

⇒ [“6.7.6 Install inner joint VL107”, page 168](#)

⇒ [“6.7.7 Install inner joint AAR2600i”, page 171](#)

⇒ [“6.7.8 Install inner joint AAR3300i”, page 173](#)

⇒ [“6.7.9 Removing outer CV joint”, page 175](#)

⇒ [“6.7.10 Installing the outer CV joint”, page 176](#)

⇒ [“6.7.11 Repairing intermediate shaft”, page 178](#)

6.7.1 Removing inner joint VL90 and VL100

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust piece - MP3-411 (VW 454)-
- ◆ Pressure spindle - MP3-448 (VW 408 A)-
- ◆ Thrust washer - MP3-455 (VW 447 H)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Circlip pliers , e.g. -VW 161 A-
- ◆ Tensioning pliers , e.g. -V.A.G 1682 A-
- ◆ Assembly tool - T10065-



Note

- ◆ *Before removing the joints and the joint boots, thoroughly clean their surrounding areas.*
- ◆ *When disassembling the joint, remove the old lubricant and any dirt present.*
- ◆ *Clean the joint with great care.*
- ◆ *Dispose of old lubricant and cleaning agent in compliance with the applicable regulations.*
- ◆ *Place removed and cleaned parts on a clean surface and cover as needed. Use lint-free cloths!*
- ◆ *Carefully cover removed parts if the repair is not completed immediately.*
- ◆ *Only install clean parts: remove spare parts from their wrapping immediately before fitting. Do not use any parts which have been stored unwrapped (e.g. on a shelf or in a tool box etc...).*

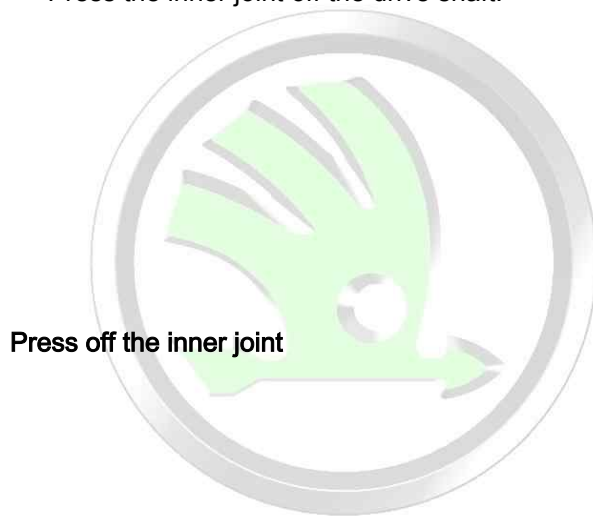
Removing and installing outer joint

⇒ [“6.7.9 Removing outer CV joint”, page 175](#) .

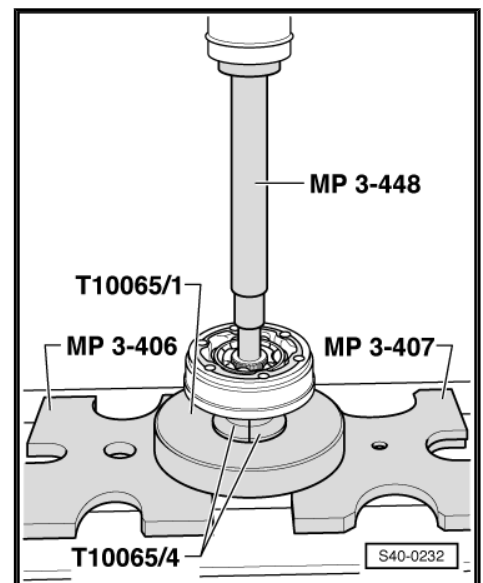
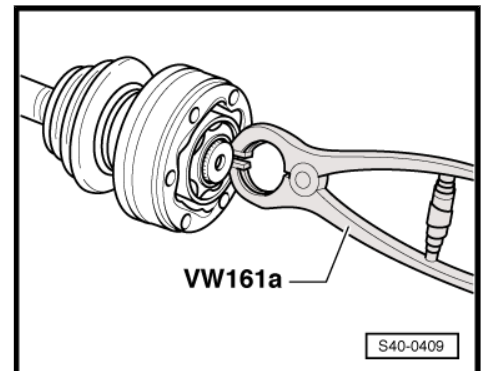
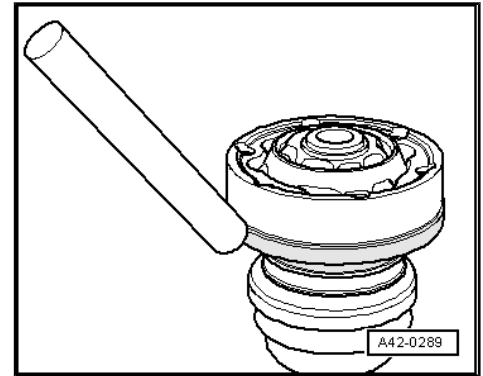
- Drive off cover and joint boot with a drift.
- Open warm-type clamps.
- Push the cover with the warm-type clamp in direction of outer joint.

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- Remove circlip with a pair of circlip pliers .
- Press the inner joint off the drive shaft.



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6.7.2 Remove inner joint VL107

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust piece - MP3-411 (VW 454)-
- ◆ Pressure spindle - MP3-448 (VW 408 A)-
- ◆ Thrust washer - MP3-455 (VW 447 H)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Circlip pliers , e.g. -VW 161 A-
- ◆ Tensioning pliers , e.g. -V.A.G 1682 A-

◆ Assembly tool - T10065-

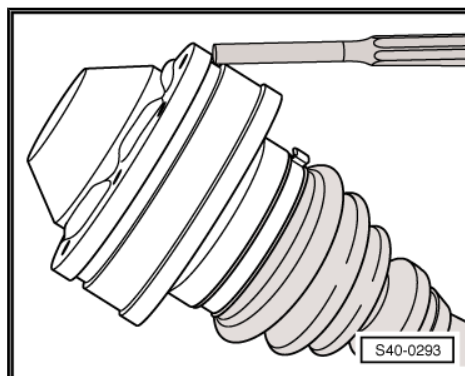
Removing and installing outer joint

⇒ "6.7.9 Removing outer CV joint", page 175 .

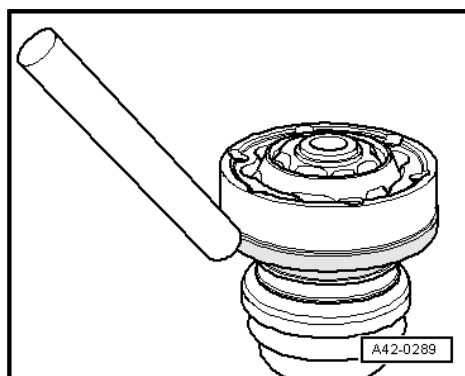
- Drive off cover for inner joint with a drift.

Remove cover for inner joint

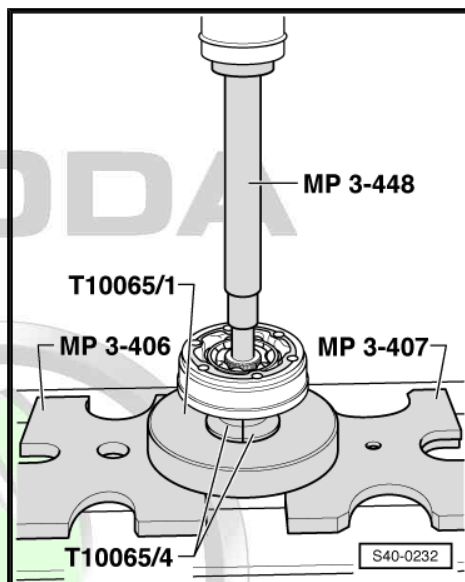
- Remove open warm-type clamps, push the joint boot to the outer joint.



- Drive off cap of joint boot with a drift.
- Remove circlip with a pair of circlip pliers.
- Press the inner joint off the drive shaft.



Press off the inner joint



6.7.3 Remove inner joint AAR2600i

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust washer - MP3-455 (VW 447 H)-
- ◆ Pressure spindle - MP3-448 (VW 408 A)-
- ◆ Thrust piece - MP6-405 (VW 411)-

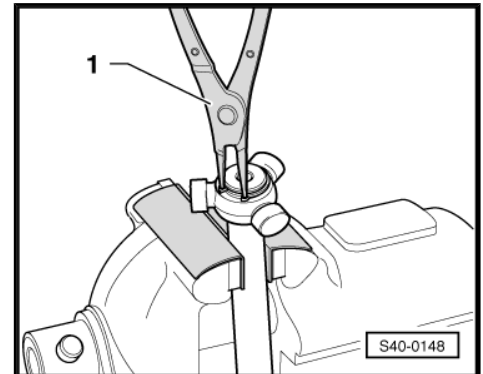
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- ◆ Pipe section - MP3-4012 (VW 416 B)-
- ◆ Circlip pliers , e.g. -VW 161A-
- ◆ Hose strap pliers , e.g. -V.A.G 1275 -
- ◆ Assembly tool - T10065-

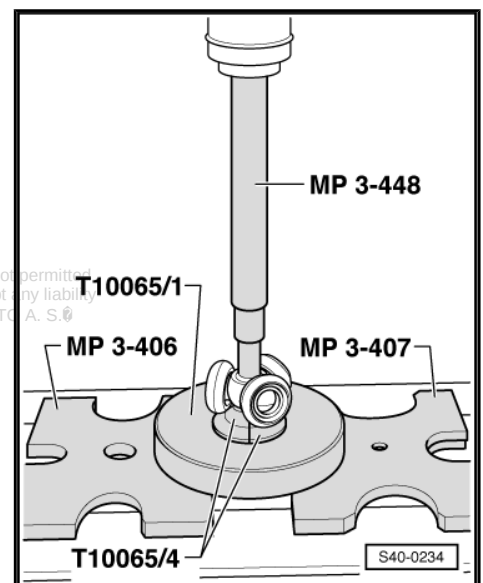
Removing and installing outer joint

⇒ ["6.7.9 Removing outer CV joint", page 175](#) .

- Open both warm-type clamps at inner joint and push back the joint boot.
- Remove the joint part from the cardan shaft.
- Remove circlip with circlip pliers -1-.
- Insert the cardan shaft in the press.



- Press tripod spider off the cardan shaft.
- Remove the joint boot from the shaft.
- Clean the shaft, the joint part and the slot for the gasket ring.



6.7.4 Remove inner joint AAR3300i

Special tools and workshop equipment required

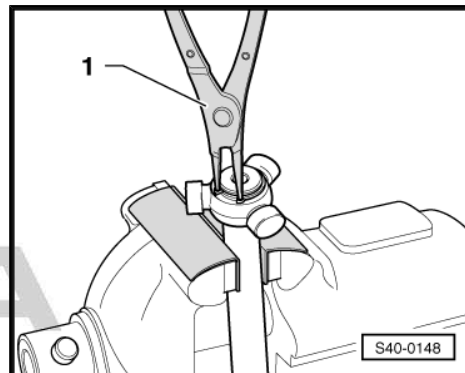
- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust washer - MP3-455 (VW 447 H)-
- ◆ Pressure spindle - MP3-448 (VW 408 A)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Pipe section - MP3-4012 (VW 416 B)-
- ◆ Circlip pliers , e.g. -VW 161A-
- ◆ Hose strap pliers , e.g. -V.A.G 1275-

◆ Assembly tool - T10065-

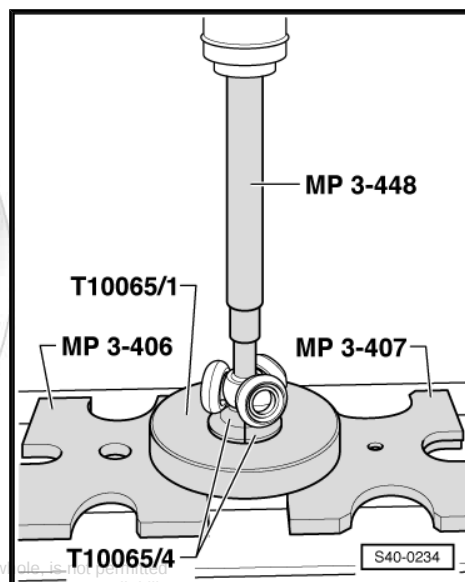
Removing and installing outer joint

⇒ ["6.7.9 Removing outer CV joint", page 175](#) .

- Open both warm-type clamps at inner joint and push back the joint boot.
- Remove the joint part or the driver from the drive shaft.
- Remove circlip with circlip pliers -1-.
- 1 - Pliers (commercially available) or e.g. -VW 161A-
- Insert the cardan shaft in the press.



- Press tripod spider off the cardan shaft.
- Remove the joint boot from the shaft.
- Clean the shaft, the joint part and the slot for the gasket ring.

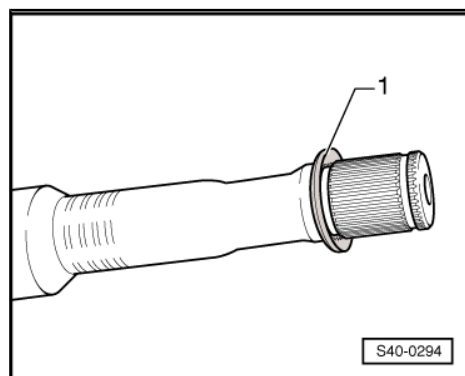


6.7.5 Installing inner joint VL90 and VL100

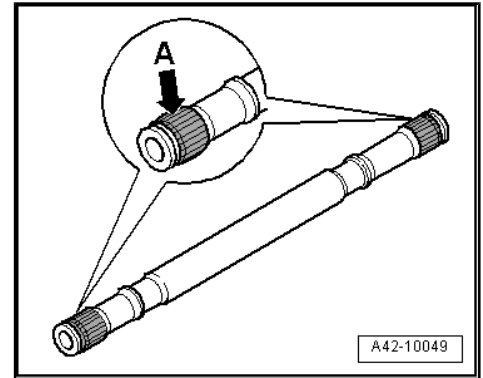
- Push a small open warm-type clamp for the joint boot onto the drive shaft.
- Push the sheet metal cover with the joint boot onto the drive shaft.
- Pay attention to the fitting position of the disc spring at the inner joint.

Fitting position of the disc spring at inner joint

- 1 - Disc spring



- Thinly coat the serration -A- with joint grease.
- Press the joint up to the stop.



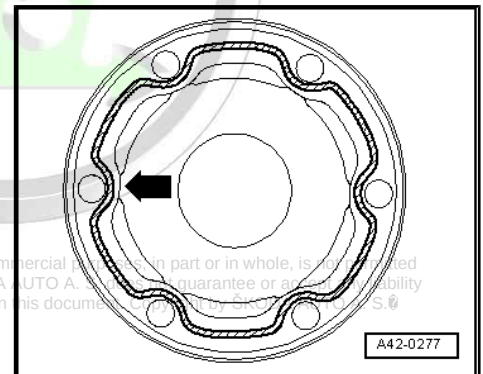
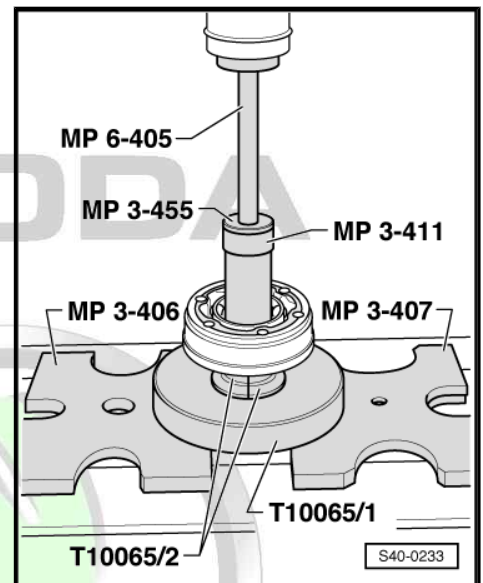
Pressing on the inner joint



Note

Chamfer on inner diameter of the ball hub (serration) must point towards the bearing collar of the drive shaft.

- Install circlip.
- Fill the joint with grease
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131 .
- Clean and degrease the end faces of the joint.
- Clean and degrease the end face of the sheet metal cover for the joint boot which rests against the joint.
- Apply sealant -D 454 300 A2- on the shaded surfaces of the cover.
- ◆ Sealant bead: apply continuously, Ø 2...3 mm, in the area of the holes from inside -arrow-.
- Push the sheet metal cover with the joint boot onto the joint.



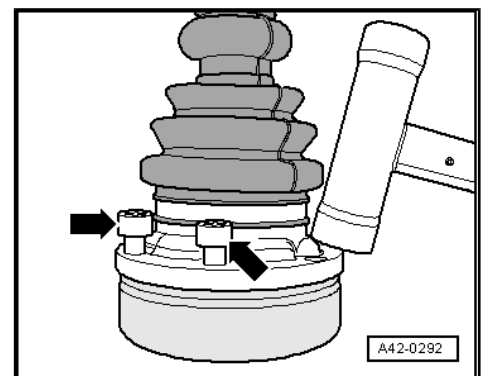
- Align the cover with the joint boot to the screw holes with screws -arrows-.



Note

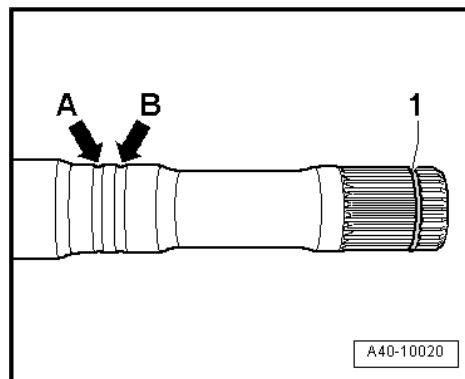
The alignment must be performed very carefully as this is no longer possible after striking it.

- Use a plastic hammer to strike the sheet metal cover with the joint boot on the joint.
- Wipe off any excess sealant, if necessary.
- Remove the protective foil from the gasket and stick the gasket into the joint from the gearbox side.



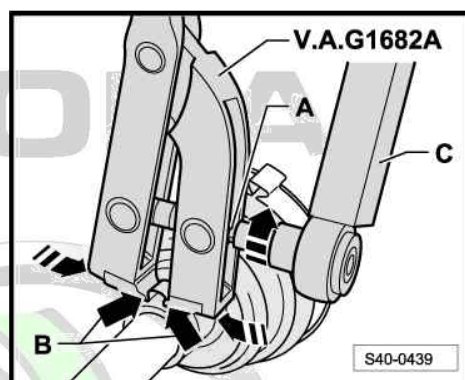


- Insert the joint boot into the outer groove of the shaft -arrow B-.
- Install warm-type clamp.



Tighten warm-type clamp

- Position the tensioning pliers as shown in the figure. Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).

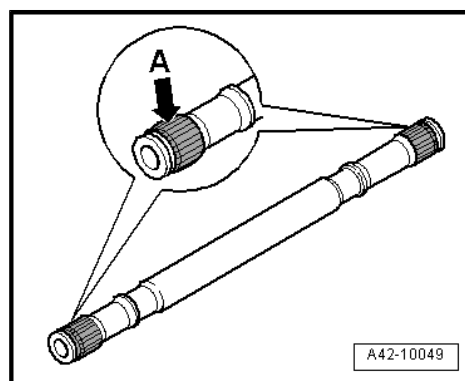


Note

- ♦ *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers, e.g. -V.A.G 1682 A-.*
- ♦ *Tightening torque: 25 Nm.*
- ♦ *Use torque wrench -C-.*
- ♦ *Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.*
- ♦ *If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.*

6.7.6 Install inner joint VL107

- Push a small open warm-type clamp for the joint boot onto the drive shaft.
- Push the joint boot and the cap of the boot onto the drive shaft.
- Thinly coat the serration -A- with joint grease.
- Press the joint up to the stop.



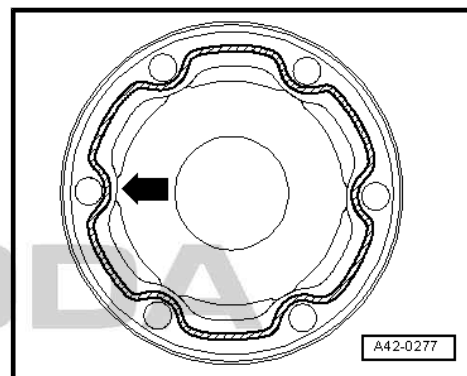
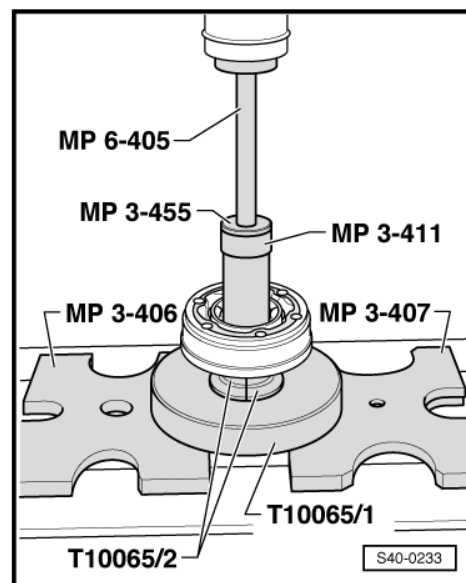
Pressing on the inner joint



Note

Chamfer on inner diameter of the ball hub (serration) must point towards the bearing collar of the drive shaft.

- Insert the circlip.
- Fill the joint with grease
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131 .
- Clean and degrease the end faces of the joint.
- Clean and degrease the end face of the cover or the sheet metal cap for the joint boot which rests against the joint.
- Apply sealant -D 454 300 A2- on the shaded surfaces of the cover or the cap.
- ◆ Sealant bead: apply continuously, Ø 2...3 mm, in the area of the holes from inside -arrow-.
- Push the sheet metal cap of the joint boot onto the joint.



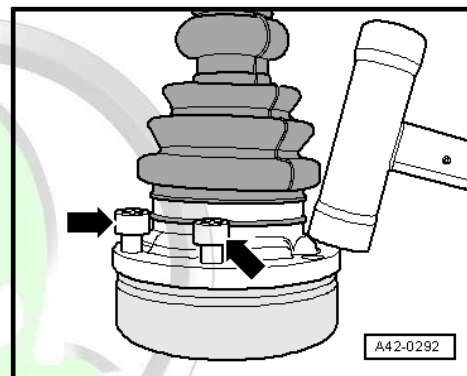
- Align the cap of the joint boot to the screw holes with screws -arrows-.



Note

The alignment must be performed very carefully as this is no longer possible after striking it.

- Use a plastic hammer to strike the sheet metal cap of the joint boot on the joint.
- Wipe off any excess sealant, if necessary.
- If necessary, stick the gasket into the joint from the gearbox side (remove the protective foil and stick the gasket into the joint). Assignment ⇒ Electronic Catalogue of Original Parts .





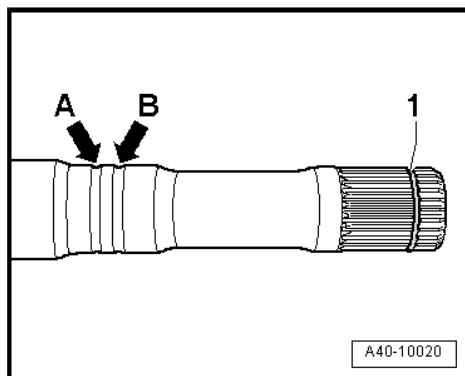
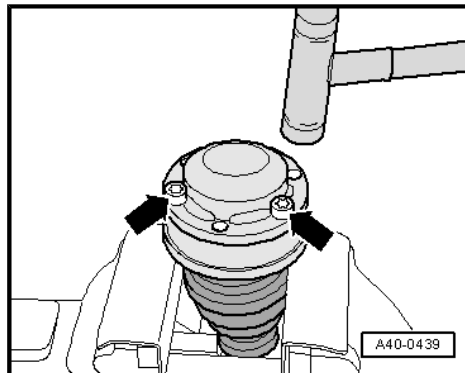
- Align the new cover to the screw holes -arrows-.



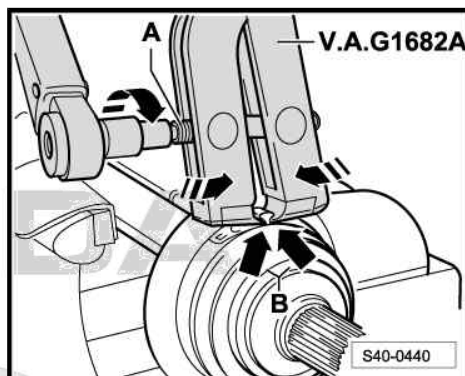
Note

The alignment must be performed very carefully as this is no longer possible after striking it.

- Use a plastic hammer to strike the sheet metal cover on the joint.
- Wipe off any excess sealant, if necessary.
- Insert the joint boot on the joint and into the outer groove of the shaft -arrow B-.
- Install warm-type clamps.



Tighten the open warm-type clamp at the larger diameter

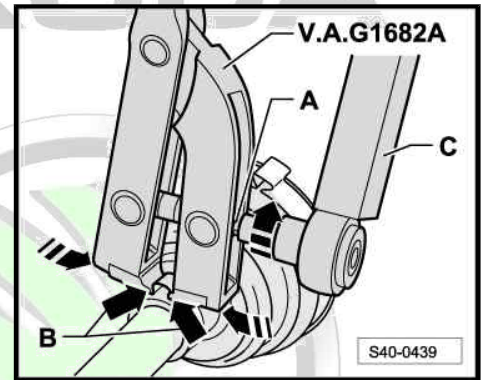


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Tighten the open warm-type clamp at the smaller diameter

- Fit tensioning pliers , e.g. -V.A.G 1682 A- , as shown Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).



Note

- ◆ *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers , e.g. -V.A.G 1682 A- .*
- ◆ *Tightening torque: 25 Nm.*
- ◆ *Use torque wrench -C-.*
- ◆ *Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.*
- ◆ *If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.*

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6.7.7 Install inner joint AAR2600i

- Push a small open warm-type clamp for the joint boot onto the drive shaft.
- Push the joint boot onto the shaft.
- Push the joint piece onto the cardan shaft.

Install tripod spider

Cardan shaft in conical version

The chamfer of the tripod spider points towards the shaft and assists installation.

- If necessary, coat the serration of the drive shaft and the tripod spider with joint grease.
- Insert the tripod spider onto the shaft and press it up to the stop.
- Make sure that the force of pressure does not exceed 3.0 kN!
- Insert circlip and pay attention to correct position.
- Press 70 grams of grease for the drive shaft from the repair kit in the tripod joint.
- Slide the joint part over the rollers and hold down.
- Press 60 grams of grease for the drive shaft from the repair kit in the rear side of the tripod joint.

Grease

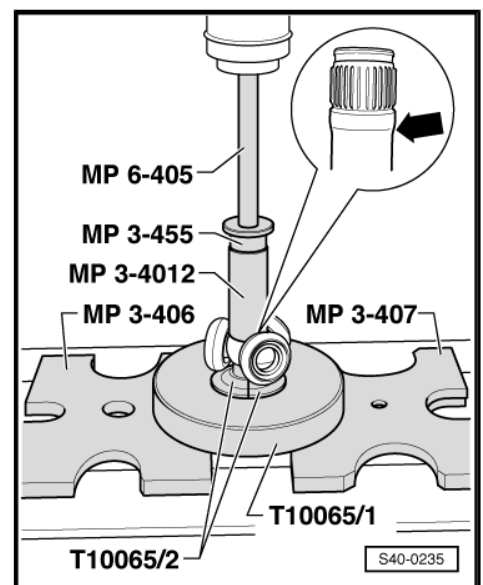
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#) .

- Installing the joint boot.

Install tripod spider

Cardan shaft in cylindrical version

- If necessary, coat the serration of the drive shaft and the tripod spider with joint grease.





- Insert the tripod spider onto the shaft and press it up to the stop.
- Make sure that the force of pressure does not exceed 3.0 kN!
- Insert circlip and pay attention to correct position.
- Press 70 grams of grease for the drive shaft from the repair kit in the tripod joint.
- Slide the joint part over the rollers and hold down.
- Press 60 grams of grease for the drive shaft from the repair kit in the rear side of the tripod joint.

Grease

⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131 .

- Installing the joint boot.

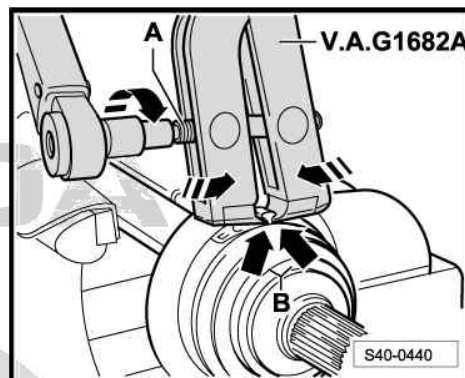
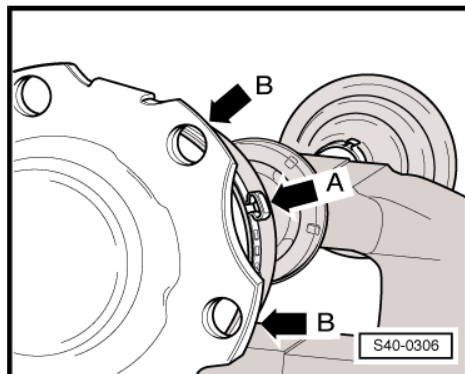
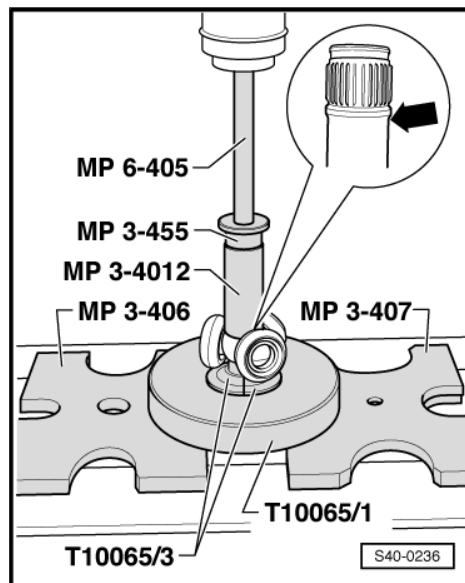
- Install warm-type clamps.



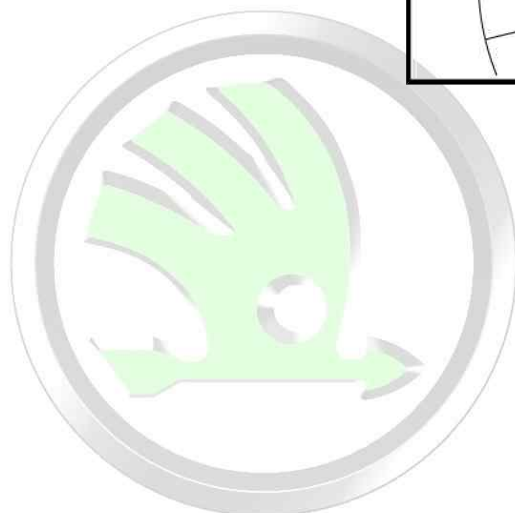
Note

In order to better guide the splined nuts when installing the drive shaft, it is necessary that the clamping pipe of the open warm-type clamp -arrow A- is located between the holes for the fixing flanges of the joint part -arrows B-.

Tighten the open warm-type clamp at the larger diameter



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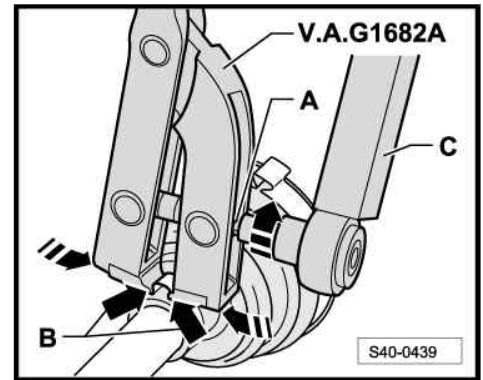
Tighten the open warm-type clamp at the smaller diameter

- Fit tensioning pliers, e.g. -V.A.G 1682 A-, as shown. Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).



Note

- ◆ *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers, e.g. -V.A.G 1682 A-.*
- ◆ *Tightening torque: 25 Nm.*
- ◆ *Use torque wrench -C-.*
- ◆ *Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.*
- ◆ *If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.*



6.7.8 Install inner joint AAR3300i

- Push a small open warm-type clamp for the joint boot onto the drive shaft.
- Push the joint boot onto the shaft.
- Push the joint piece onto the cardan shaft.

Install tripod spider

Cardan shaft in conical version

The chamfer of the tripod spider points towards the shaft and assists installation.

- If necessary, coat the serration of the drive shaft and the tripod spider with joint grease.
- Insert the tripod spider onto the shaft and press it up to the stop.
- Make sure that the force of pressure does not exceed 3.0 kN!
- Insert circlip and pay attention to correct position.
- Press 70 grams of grease for the drive shaft from the repair kit in the tripod joint.
- Slide the joint part over the rollers and hold down.
- Press 60 grams of grease for the drive shaft from the repair kit in the rear side of the tripod joint.

Grease

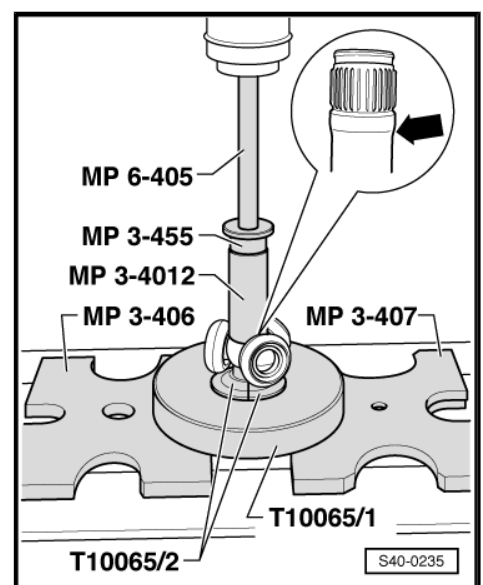
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131](#).

- Installing the joint boot.

Install tripod spider

Cardan shaft in cylindrical version

- If necessary, coat the serration of the drive shaft and the tripod spider with joint grease.



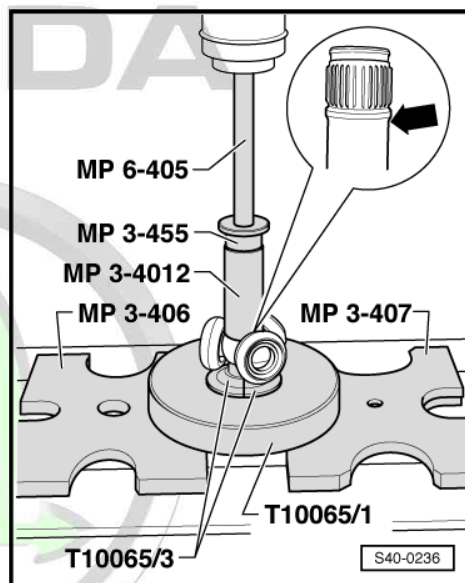


- Insert the tripod spider onto the shaft and press it up to the stop.
- Make sure that the force of pressure does not exceed 3.0 kN!
- Insert circlip and pay attention to correct position.
- Press 70 grams of grease for the drive shaft from the repair kit in the tripod joint.
- Slide the joint part over the rollers and hold down.
- Press 60 grams of grease for the drive shaft from the repair kit in the rear side of the tripod joint.

Grease

⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131 .

- Installing the joint boot.

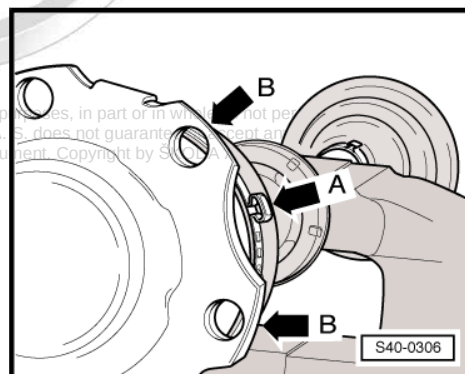


- Install warm-type clamp.

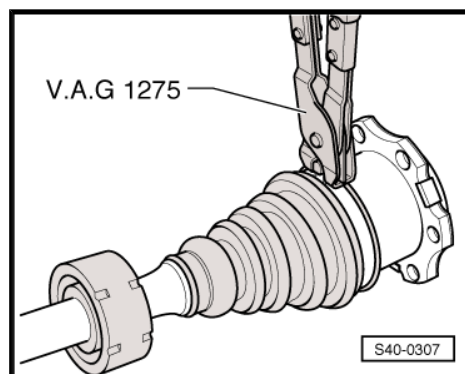


Note

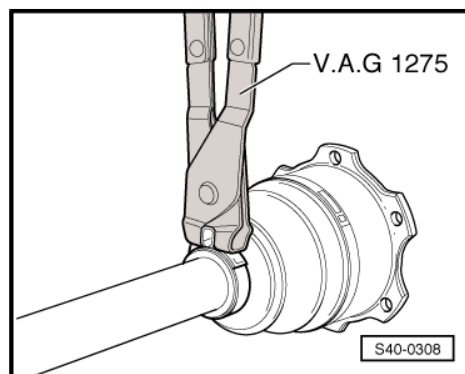
In order to better guide the splined nuts when installing the drive shaft, it is necessary that the clamping pipe of the open warm-type clamp -arrow A- is located between the holes for the fixing flanges of the joint part -arrows B-.



- Tighten warm-type clamp e.g. using hose binding claw - V.A.G 1275-



- tighten small warm-type clamp using hose binding claw - V.A.G 1275- .



6.7.9 Removing outer CV joint

Special tools and workshop equipment required

- ◆ Multi-purpose tool - MP3-419 (VW 771)-
- ◆ Extractor - T10382-

The types of joints must be distinguished according to the diameter

⇒ **"6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131** .



Note

- ◆ *Before removing the joints and the joint boots, thoroughly clean their surrounding areas.*
- ◆ *When disassembling the joint, remove the old lubricant and any dirt present.*
- ◆ *Clean the joint with great care.*
- ◆ *Dispose of old lubricant and cleaning agent in compliance with the applicable regulations.*
- ◆ *Place removed and cleaned parts on a clean surface and cover as needed. Use lint-free cloths!*
- ◆ *Carefully cover removed parts if the repair is not completed immediately.*
- ◆ *Only install clean parts: remove spare parts from their wrapping immediately before fitting. Do not use any parts which have been stored unwrapped (e.g. on a shelf or in a tool box etc...).*

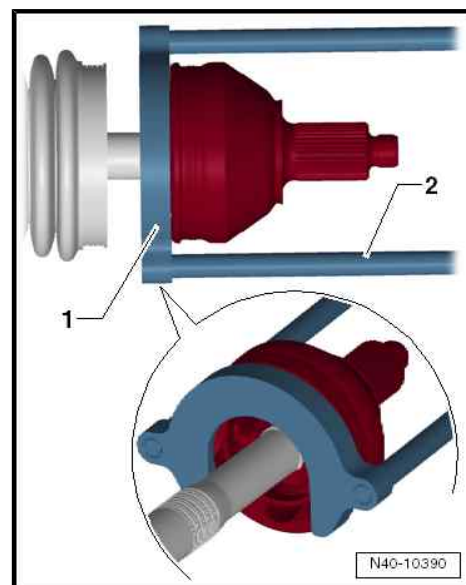
Removing outer CV joint

- Clamp the cardan shaft in a vice with protective jaws.
- Open both worm-type clamps and remove the joint boot from the outer joint.
- Set extractor - T10382- up so that the smooth side of the puller plate - T10382/1- points to the spindles - T10382/2- .
- Fit multi-purpose tool - T10382- to extractor - MP3-419- .
- Detach the CV joint with extractor - T10382- and multi-purpose tool - MP3-419- from the drive shaft.

1 - Puller plate - T10382/1-

2 - Spindles - T10382/2-

The drift must be positioned exactly at the tripod spider of the CV joint.





6.7.10 Installing the outer CV joint

Special tools and workshop equipment required

- ◆ Tensioning pliers , e.g. -V.A.G 1682A-



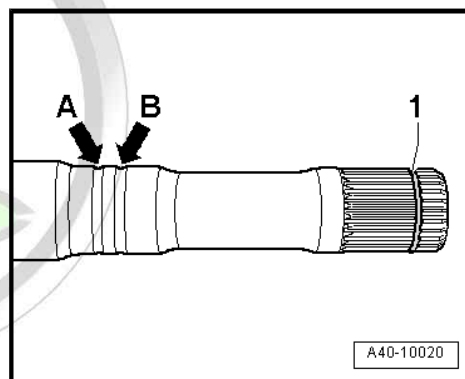
Note

- ◆ *Before removing the joints and the joint boots, thoroughly clean their surrounding areas.*
- ◆ *When disassembling the joint, remove the old lubricant and any dirt present.*
- ◆ *Clean the joint with great care.*
- ◆ *Dispose of old lubricant and cleaning agent in compliance with the applicable regulations.*
- ◆ *Place removed and cleaned parts on a clean surface and cover as needed. Use lint-free cloths!*
- ◆ *Carefully cover removed parts if the repair is not completed immediately.*
- ◆ *Only install clean parts: remove spare parts from their wrapping immediately before fitting. Do not use any parts which have been stored unwrapped (e.g. on a shelf or in a tool box etc...).*

The joint boot and the drive shaft must be free of grease.

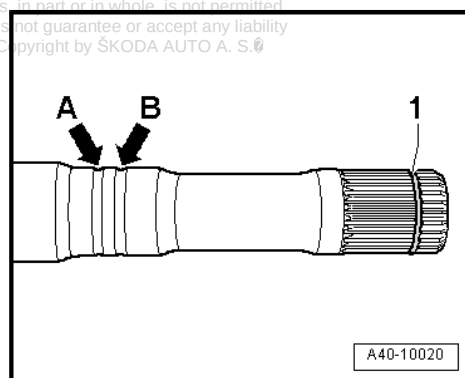
- Always replace circlip -1-.
- Push on the small open worm-type clamp with the joint boot and position the joint boot onto the drive shaft according to the version.

Version with the identification groove



- Fit the joint boot in the outer groove -arrow B-. The inner groove -arrow A- must remain visible ("identification groove" for a correct installation of the joint boot).

Version with deeper bearing



- Fit the joint boot between the -arrows-.
- Fill the joint with allowed grease quantity
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131 .

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- Thinly coat the serration -A- with joint grease before installing the joint.
- Observe the fitting position of the disc spring -1- and the thrust ring -2-.

Fitting position of the disc spring and the thrust ring



Note

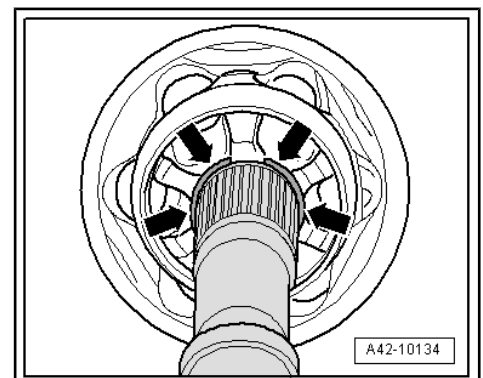
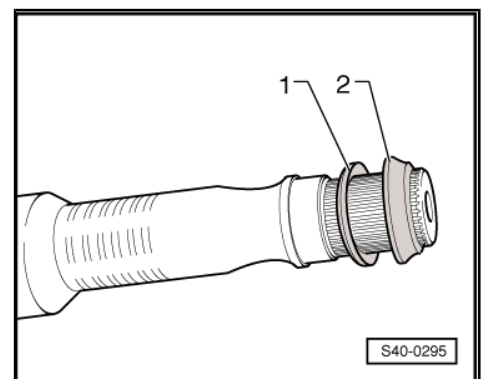
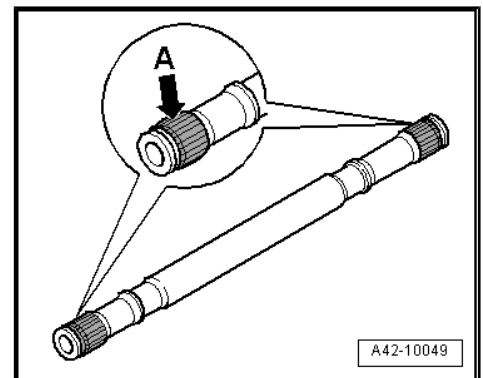
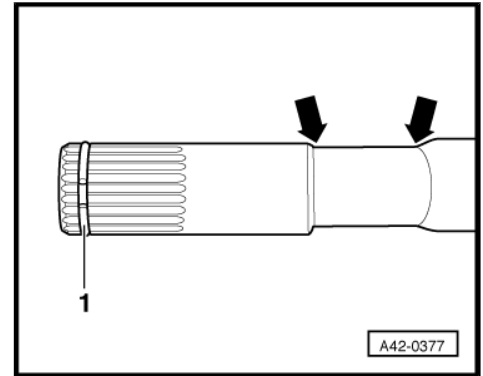
The fitting position of the disc spring -1- and the thrust ring -2- is not valid for CV joints RO104 and RO3700, which do not have these parts.

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1 - Disc spring

2 - Thrust ring

- Insert circlip in the groove of the shaft.
- Push the CV joint up to the circlip.
- Align the circlip upwards to the centre of the hole, see -arrows-.



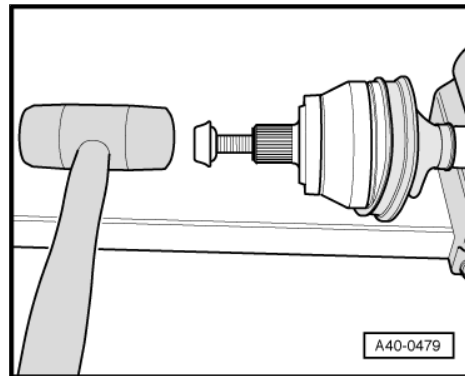


- Screw the old screw for the drive shaft, as shown, into the joint.
- Use a plastic hammer to strike the joint onto the drive shaft until the circlip locks in place.
- Fill the joint with the allowed grease quantity on the side of the boot, see table
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 131.
- Push the joint boot onto the joint.
- Bleed the joint boot.
- Pay attention to the correct position of the joint boot on the outer joint.

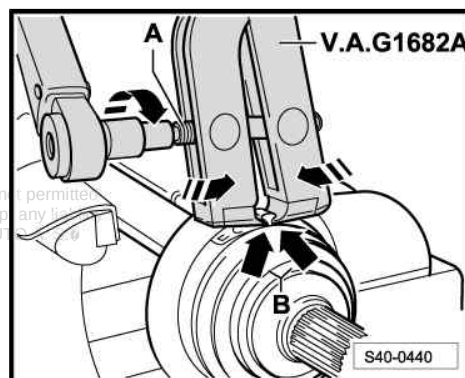
The joint boot must be positioned in the groove and must rest on the contour of the joint.

- Tighten the open warm-type clamp on the outer joint.

Tighten the open warm-type clamp at the larger diameter



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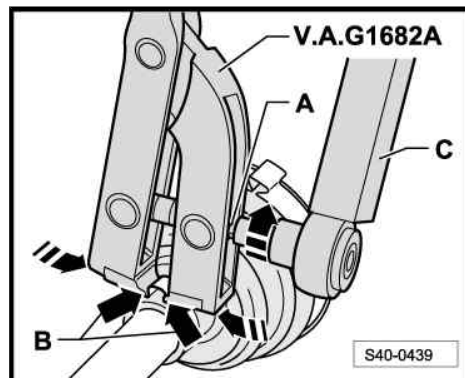
Tighten the open warm-type clamp at the smaller diameter

- Position the tensioning pliers as shown in the figure. Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).



Note

- ♦ *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers, e.g. -V.A.G 1682A-.*
- ♦ *Tightening torque: 25 Nm.*
- ♦ *Use torque wrench -C-.*
- ♦ *Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.*
- ♦ *If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.*



6.7.11 Repairing intermediate shaft

Special tools and workshop equipment required

- ♦ Pressure plate - MP3-406 (VW 401)-
- ♦ Pressure plate - MP3-407 (VW 402)-

- ◆ Thrust piece - T10032-
- ◆ Thrust piece - MP3-472 (3118)-
- ◆ Separating tool , e.g. -15-2-

Press off bearing

- Press the bearing off the intermediate shaft as shown in the figure.

The cutting edges of the separating device - 15-2- must point at the same time towards the shaft.

- 1 - Intermediate shaft with bearing
- 2 - Pressure plate - MP3-406 (VW 401)-
- 3 - Separating tool , e.g. -15-2-
- 4 - Pressure plate - MP3-407 (VW 402)-



Note

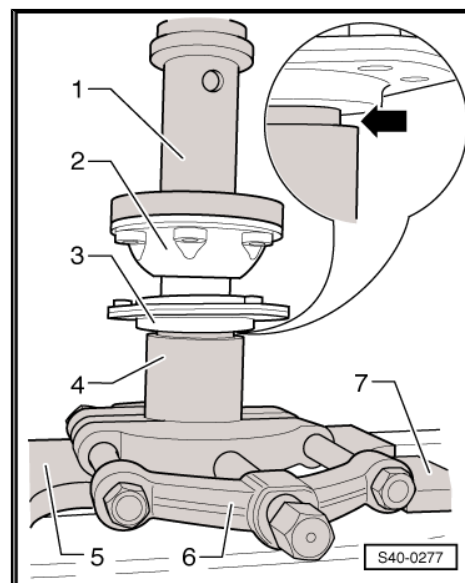
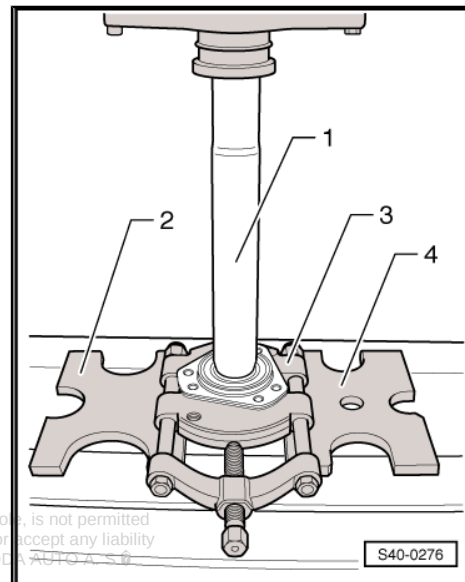
When pressing off, hold the shaft.

Press on the bearing

- Press the bearing, as shown in the figure, up to the stop onto the intermediate shaft.

- 1 - Thrust piece - T10032-
- 2 - Intermediate shaft
- 3 - Bearings
- 4 - Thrust piece - MP3-472 (3118)-
- 5 - Pressure plate - MP3-406 (VW 401)-
- 6 - Separating tool , e.g. -15-2-
- 7 - Pressure plate - MP3-407 (VW 402)-

The shoulder -arrow- of the pressure plate - MP3-472 (3118)- must point to the bearing.



6.8 Inspecting outer CV joint

Disassemble the joint to replace badly soiled grease or if the contact surfaces of the balls must be inspected for wear and damage.

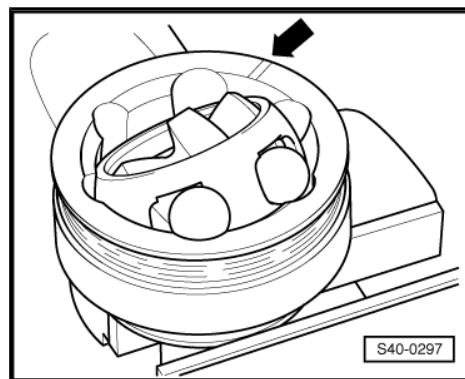
Removing

Remove outer joint

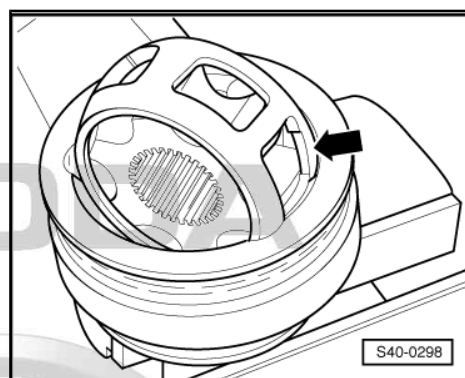
⇒ [“6.7.9 Removing outer CV joint”, page 175](#) .



- Mark the opposite position of the ball hub, the cage, the balls and the joint body before disassembling -arrow- (e.g. electric stylus, rubstone or felt-tip pen).
- Swivel the ball hub and the cage with balls until individual balls have to be removed.
- Remove the balls one after the other.



- Turn the cage until two rectangular cage windows -arrow- rest on the joint part.
- Remove cage with hub.

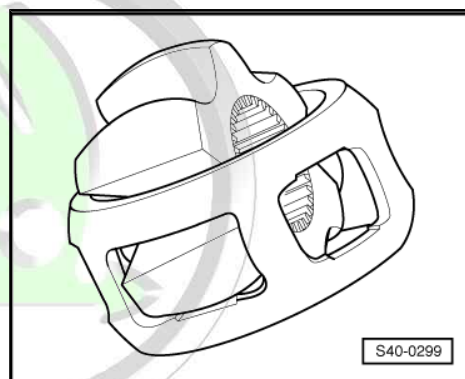


- Turn the hub segment in the window of the cage.
- Tilt hub out of the cage.

The 6 balls of each joint belong to a tolerance group. Inspect the axle studs, hub, cage and balls for small depressions (pitting = point erosion) and seizing marks. Load alteration shocks indicate too much torsional clearance in the joint. If this is the case, replace the joint. Smoothing and bearing marks do not justify a joint replacement.

Installing

- Press half of the total grease quantity into the joint body
⇒ “6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131 .
- Insert the cage and hub in the joint body.



Note

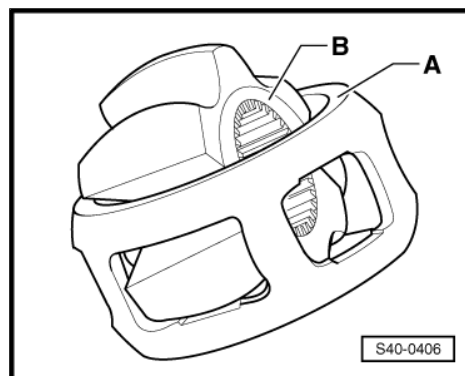
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Absolutely observe the opposite position of the ball hub, the cage and the joint body on joints RO104 and RO3700.

Fitting position of the ball hub -B- and the cage -A- for joints RO104 and RO3700

The shoulder of the hub -B- and the wider side of the cage -A- must point into the joint body.

- Press in opposite balls one after the other, during this process observe the prior position of the ball hub relatively to the ball cage and to the joint body.
- Spread the remaining grease in the joint from the side of the boot
⇒ “6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 131 .



6.9 Inspecting inner CV joint

Removing

Disassemble the joint to replace badly soiled grease or if the contact surfaces of the balls must be inspected for wear and damage.

Remove inner joint

⇒ [“6.7 Disassembling and assembling cardan shaft”, page 162](#) .

- Rotate the ball hub and ball cage.
- Press out the ball hub and the ball cage in -direction of arrow-.
- Successively press out the balls from the cage.



Note

The ball hub and joint piece are paired. These are not interchangeable.

- Tilt the ball hub out of the ball cage over the ball bearing track -arrows-.
- Inspect the joint part, ball hub, ball cage and balls for small broken out depressions (pitting = point corrosion) and seizing marks.

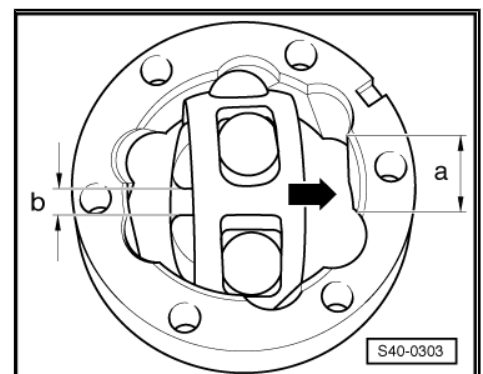
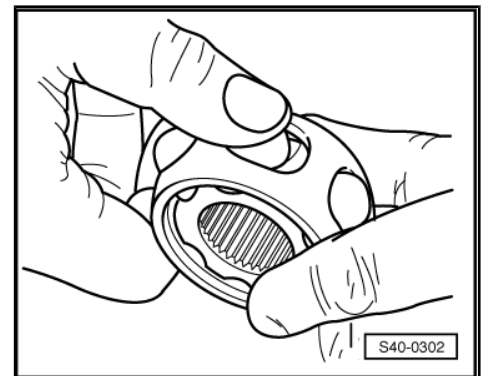
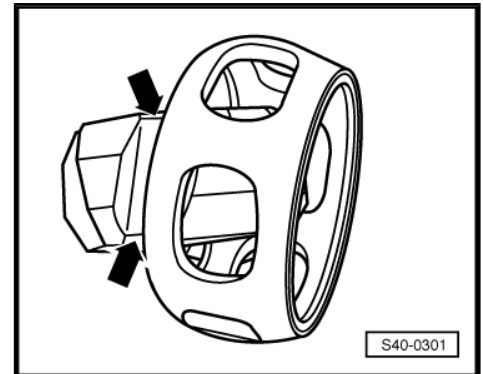
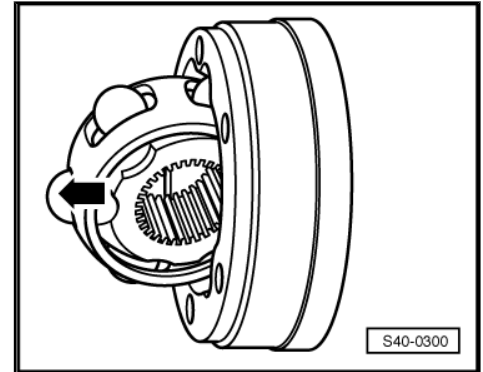
Load alteration shocks indicate too much torsional clearance in the joint. If this is the case, replace the joint. Smoothing and bearing marks do not justify a joint replacement.

Installing

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- Insert the ball hub in the ball cage over the two chamfers. The fitting location is random. Press the balls into the cage.
- Insert the hub with cage upright into the joint part.

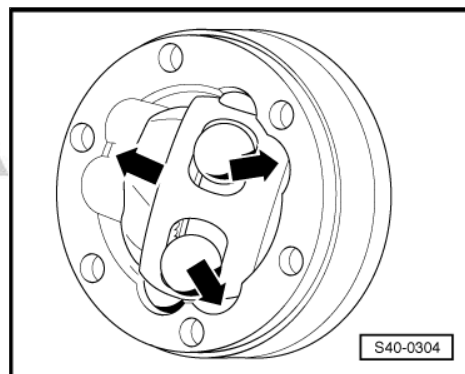
- ◆ When inserting make sure the greatest distance -a- on the joint part is close to the short distance -b- on the hub after it has been swivelled in.
- ◆ Chamfer on inner diameter of the ball hub (serration) must point towards the large diameter of the joint body.



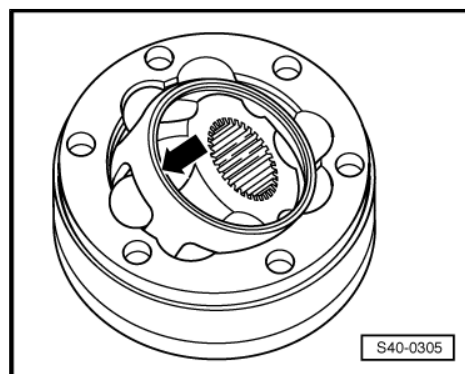


- Swivel in the ball hub, to do so swivel the hub out of the cage -arrows- until the balls are at bearing track distance.

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- Lock the hub with the balls into position by exerting considerable pressure on the cage -arrow-.



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42 – Rear suspension

1 Rear axle

⇒ [“1.1 Overview - rear axle”, page 183](#)

⇒ [“1.2 Removing and installing rear suspension”, page 186](#)

1.1 Overview - rear axle

⇒ [“1.1.1 Overview - rear axle, vehicles with front-wheel drive”, page 183](#)

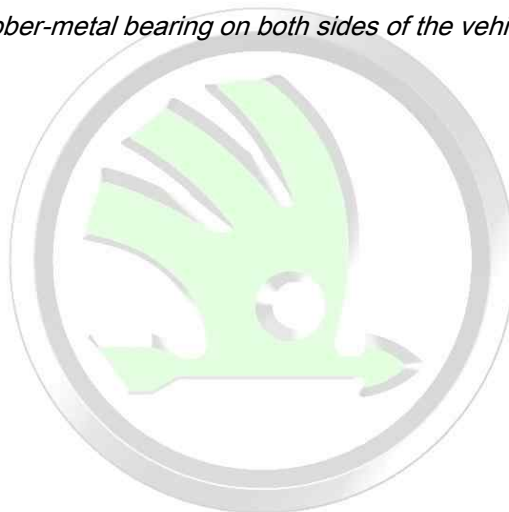
⇒ [“1.1.2 Overview - rear axle, vehicles with four-wheel drive”, page 185](#)

1.1.1 Overview - rear axle, vehicles with front-wheel drive



Note

- ◆ *Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.*
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*
- ◆ *Rubber-metal bearings can be twisted only to a limited extent. Therefore first tighten the screwed connections to the components with rubber-metal bearings, if the wheel-bearing housing is lifted (unladen weight position) ⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).*
- ◆ *Always replace rubber-metal bearing on both sides of the vehicle.*



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I -

⇒ "2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive", page 198

II -

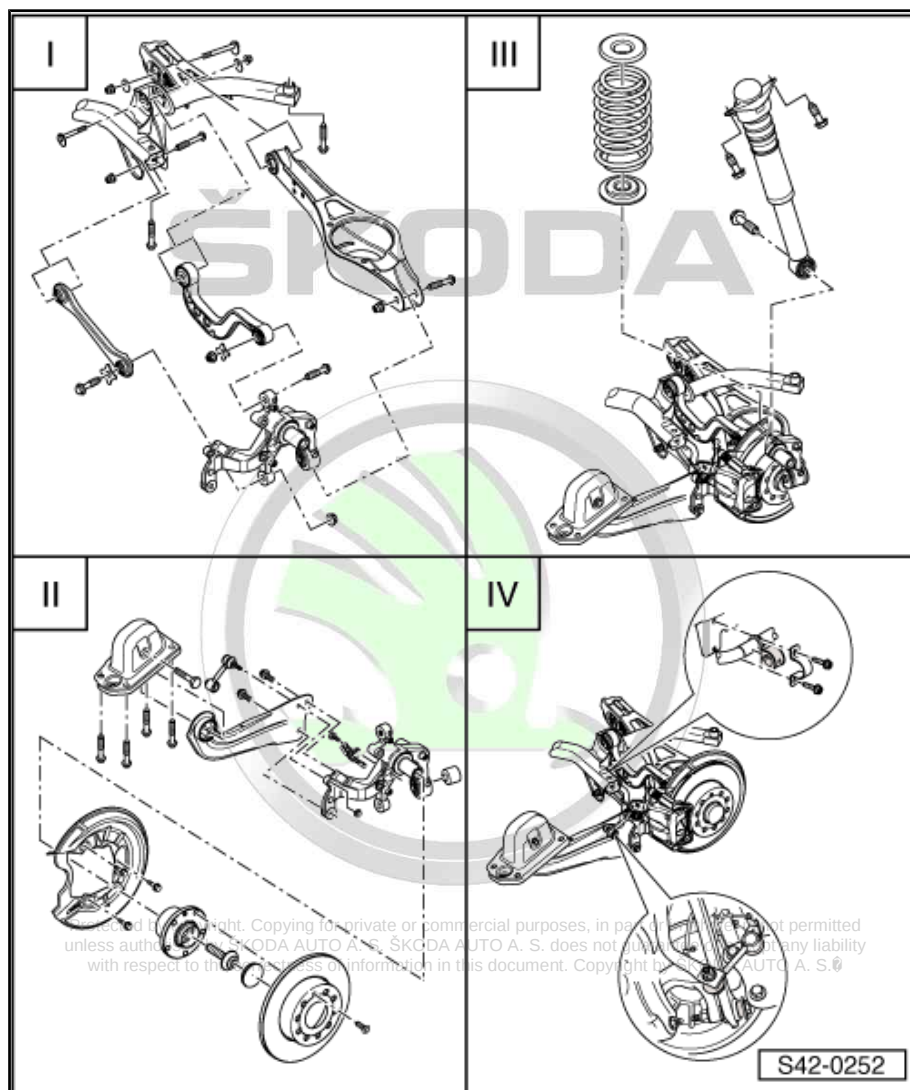
⇒ "5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive", page 246

III -

⇒ "4.1.1 Summary of components - strut / shock absorber, spring, vehicles with front wheel drive", page 238

IV -

⇒ "3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232



1.1.2 Overview - rear axle, vehicles with four-wheel drive



Note

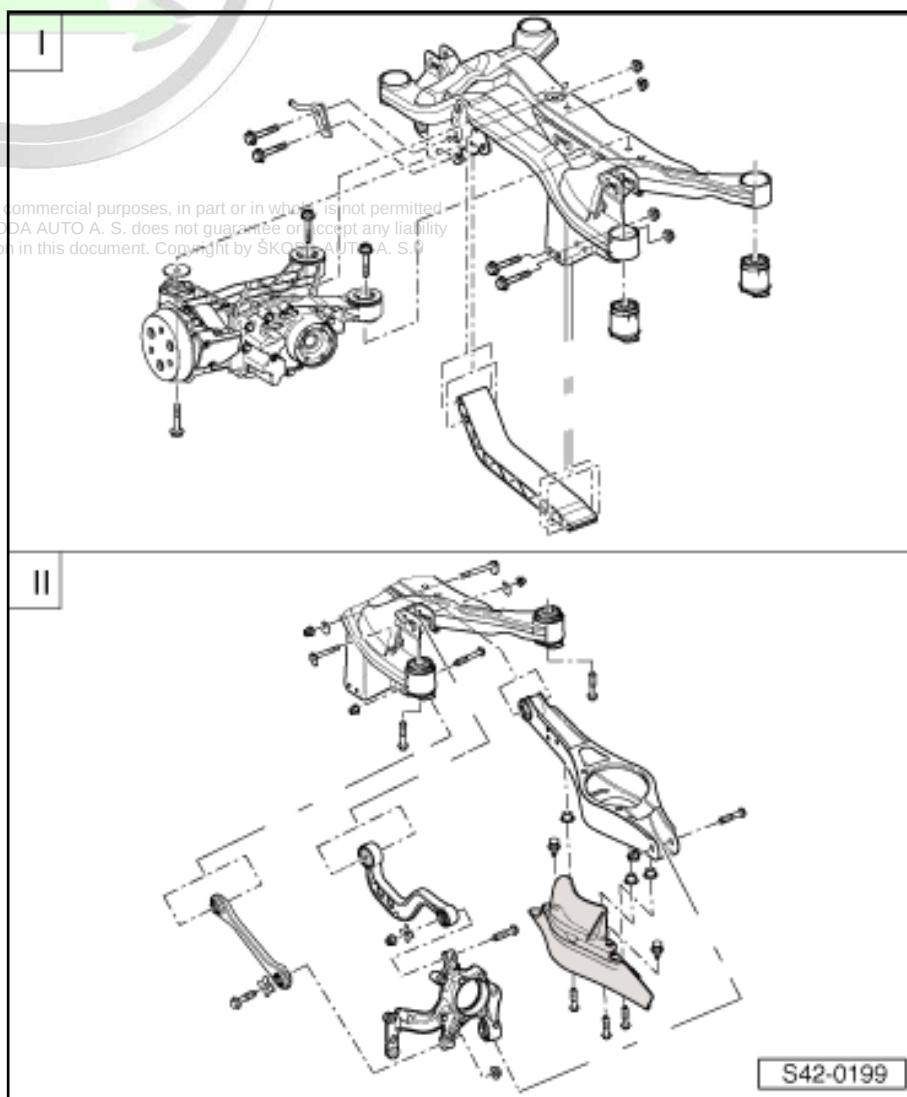
- ◆ *Welding and straightening work is not allowed on the bearing and wheel control components of the wheel suspension.*
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*
- ◆ *Rubber-metal bearings can be twisted only to a limited extent. Therefore first tighten up the screwed connections to the components with rubber-metal bearings, if the wheel-bearing housing is lifted (unladen weight position) ⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#).*
- ◆ *Always replace rubber-metal bearing on both sides of the vehicle.*

I -

⇒ ["2.1.3 Summary of components: assembly carrier, final drive, vehicles with four-wheel drive", page 205](#)

II -

⇒ ["2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202](#)



-Arrows- point in direction of travel.



III -

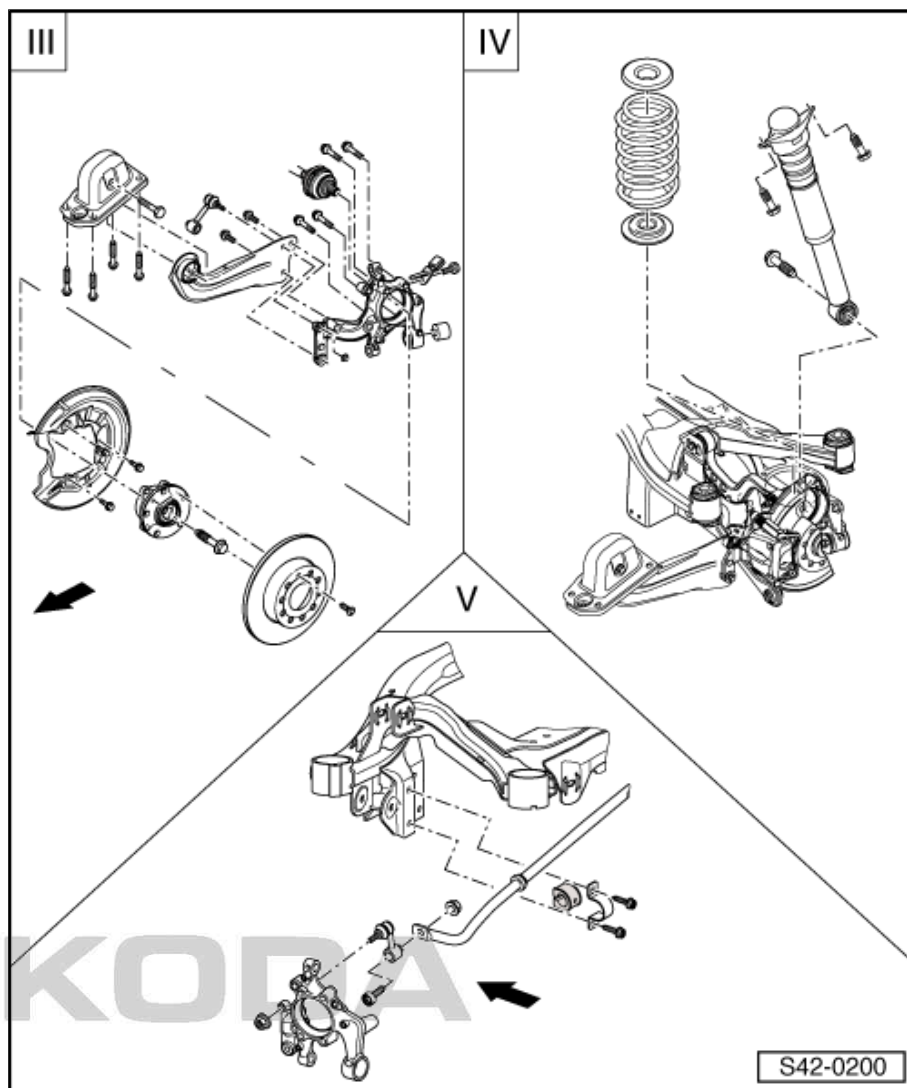
⇒ "5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive", page 249

IV -

⇒ "4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive", page 240

V -

⇒ "3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233



⇒ "6.1 Summary of components - cardan shaft", page 273

1.2 Removing and installing rear suspension

⇒ "1.2.1 Removing and installing rear axle, vehicles with front-wheel drive", page 186

⇒ "1.2.2 Removing and installing the rear axle, vehicles with four-wheel drive", page 191

1.2.1 Removing and installing rear axle, vehicles with front-wheel drive

Special tools and workshop equipment required

- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Tensioning strap - T10038-
- ◆ Fixing device - T10096-

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Removing



Note

The components of the rear axle must be removed and installed in the same way on both sides of the axle.

- Remove wheels.
- Remove coil springs
⇒ ["4.4 Removing and installing spring", page 242](#) .

Vehicles with vehicle level sender

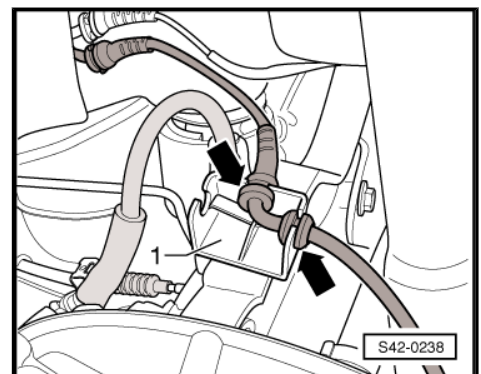
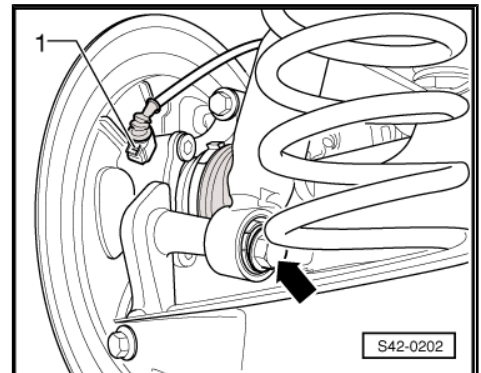
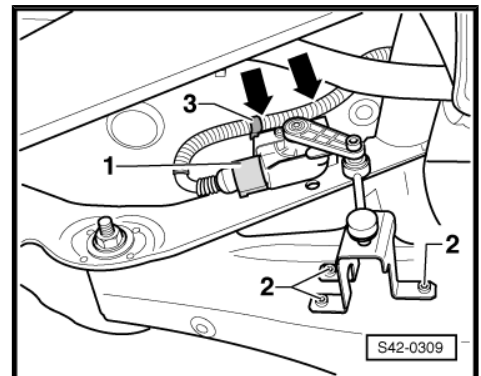
- Disconnect plug -1- and slacken line holder from the sender -3-.

Continued for all vehicles

- Disconnect the plug connections for the ABS speed sensor -1- on both sides of the vehicle.

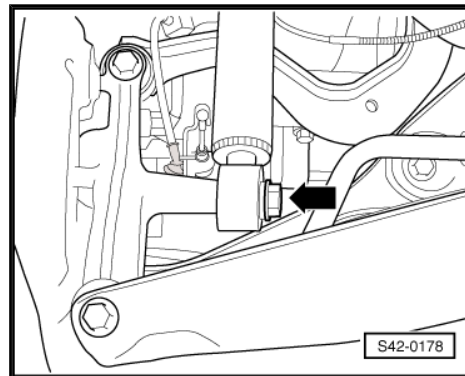
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- Unclip sensor cables -arrows- from the holders -1-.



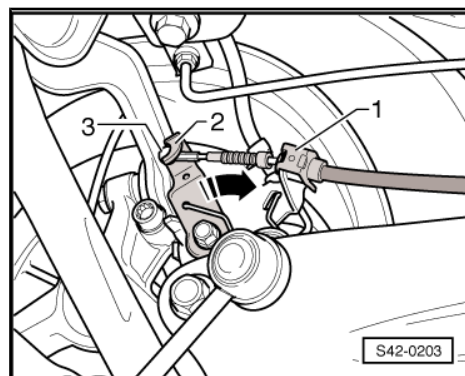


- Remove screws -arrows-.



Version with spring clip

- Slacken the spring clip -1- for the hand-brake cable.
- Press the lever -2- in the -direction of the arrow- and while doing so unhook the hand-brake cable -3-.

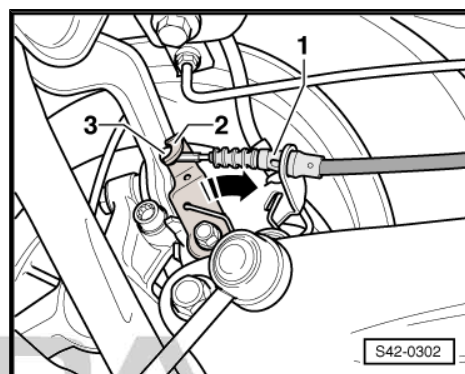


Version with spring bushing

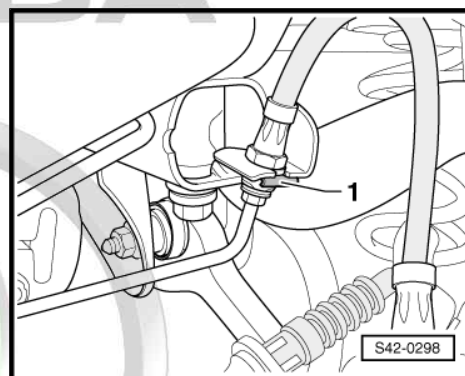
- Press the lever -2- in the -direction of the arrow- and while doing so unhook the hand-brake cable -3-.
- Slacken the spring bushing -1- for the hand-brake cable from the bracket on the brake caliper.

Continued for all vehicles

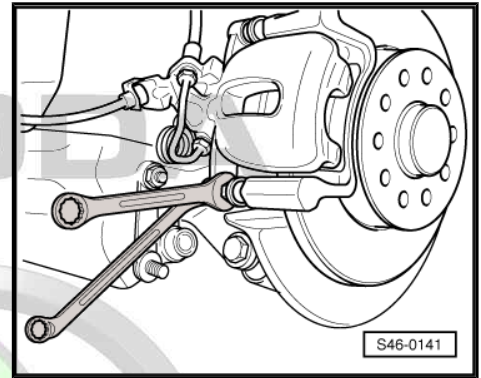
- Remove screw for hand brake cable holder from trailing arm.



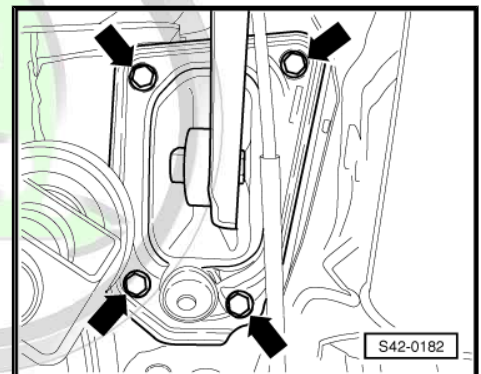
- Remove retaining clips for brake line -1-.



- Remove the brake calipers with brake carriers and hook on the body (e.g. with wire) ⇒ Brake systems; Rep. gr. 46 .



- Mark the installed position of the bracket on the body.
- Remove screws -arrows-.
- Unhook the rear silencer from the retaining strap on the assembly carrier ⇒ Engine; Rep. gr. 26 .

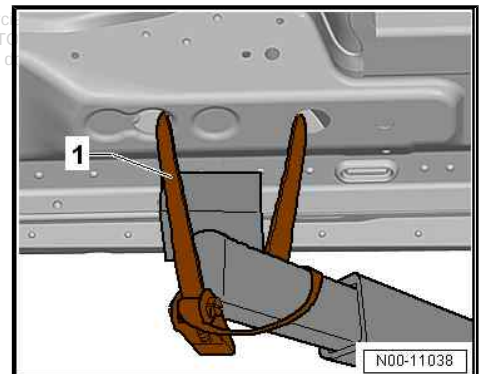


- Lash the vehicle to the lift platform using the tensioning straps - T10038- .

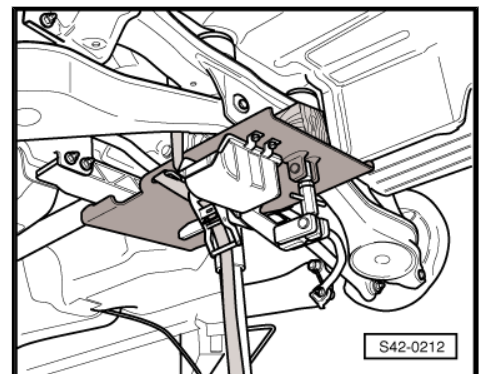


WARNING

If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



- Place engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with gearbox mount - V.A.G 1359/2- beneath the assembly carrier and secure with tensioning strap .



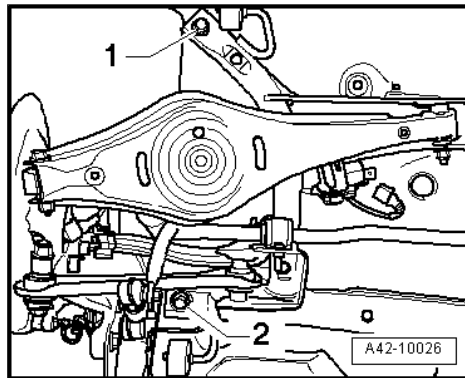


- Release screw -1- or -2- on both sides.



Note

To provide a clearer illustration, only the left vehicle side is illustrated.



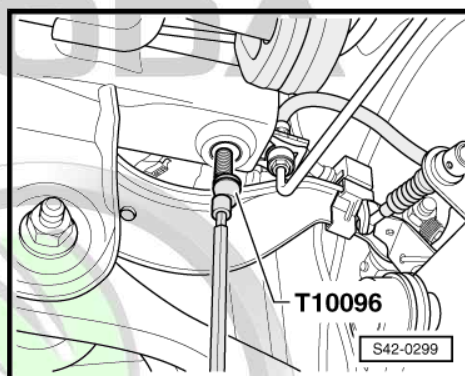
- Fix the position of the assembly carrier using fixing devices - T10096- .



Note

The locating pin - T10096- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Successively replace the fixing bolts at the assembly carrier on both sides with fixing devices - T10096- and tighten to 20 Nm.



The fitting position of the assembly carrier is now fixed.

- Carefully lower assembly carrier to maximum 30 mm.



Note

Ensure adequate clearance of brake and electric lines when lowering.

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- Unclip brake line -1- -arrows-.



Note

The fig. shows the assembly carrier from above and in the removed condition for purposes of clear presentation.

- Lowering assembly carrier with attached parts.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Carry out axle alignment ⇒ [“3.3 Axle alignment”, page 309](#) .
- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

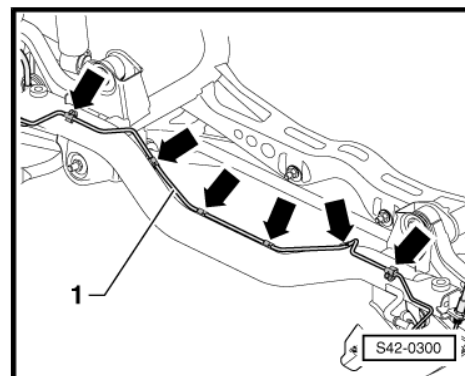
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ◆ ⇒ [“4.1.1 Summary of components - strut / shock absorber spring, vehicles with front wheel drive”, page 238](#)
- ◆ ⇒ [“5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive”, page 246](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Brake calipers with brake carrier ⇒ Brake systems; Rep. gr. 46 .
- ◆ Rear silencer ⇒ Engine; Rep. gr. 26



1.2.2 Removing and installing the rear axle, vehicles with four-wheel drive

Special tools and workshop equipment required

- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Tensioning strap - T10038-
- ◆ Fixing device - T10096-

Removing



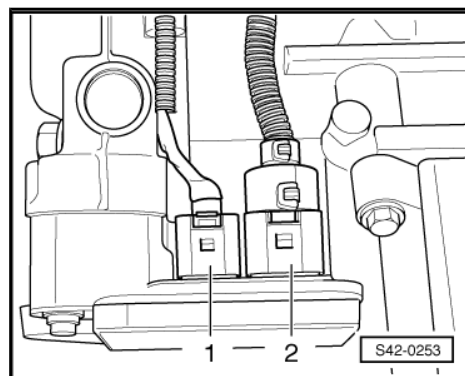
Note

- ◆ *During certain installations the fixing screw of the drive shaft must be released*
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#) .
- ◆ *The components of the rear axle must be removed and installed in the same way on both sides of the axle.*
- Remove wheels.



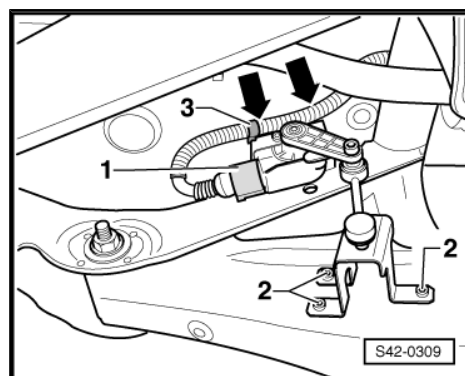
- Remove the rear silencer ⇒ Engine; Rep. gr. 26 .
- Remove coil springs
⇒ [“4.4 Removing and installing spring”, page 242](#) .
- Disconnect the plug connection -2- at the control unit of the four-wheel drive clutch.

Vehicles with vehicle level sender

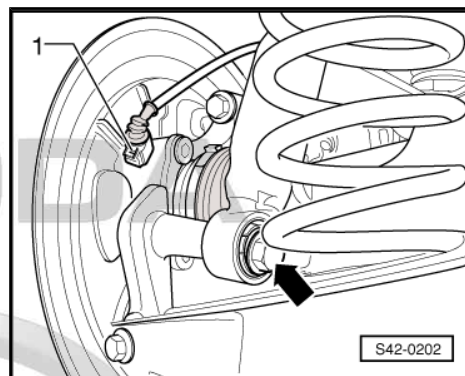


- Disconnect plug -1- and slacken line holder from the sender -3-.

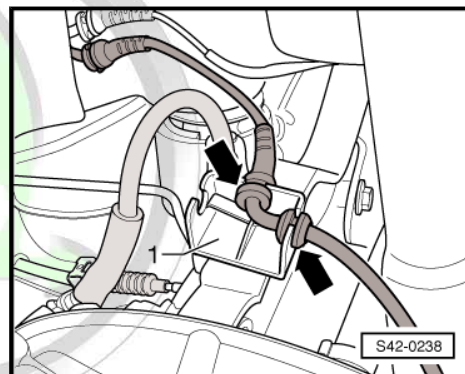
Continued for all vehicles



- Disconnect the plug of the ABS speed sensor -1- from the wheel bearing housing.



- Unclip speed sensor cable from bracket -1- -arrows-.

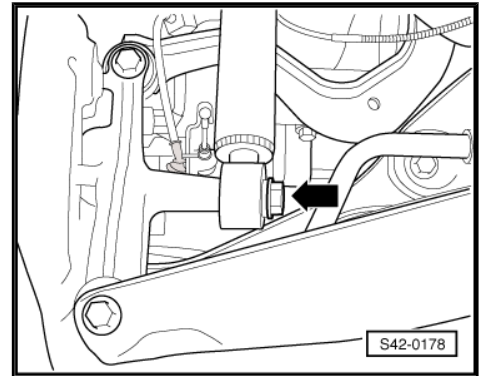


- Remove screws -arrows-.



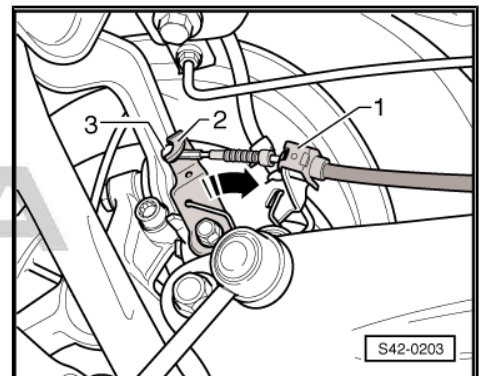
Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the shock absorber and the wheel-bearing housing, which must be installed again when reinstalling.



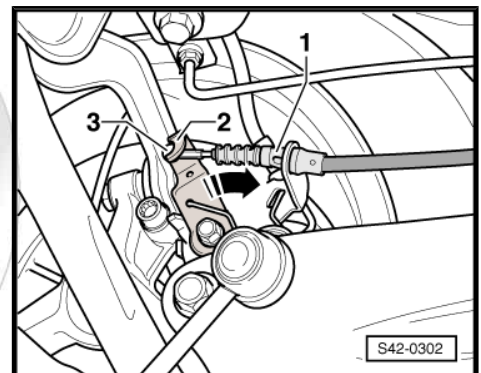
Version with spring clip

- Slacken the spring clip -1- for the hand-brake cable.
- Press the lever -2- in the -direction of the arrow- and while doing so unhook the hand-brake cable -3-.



Version with spring bushing

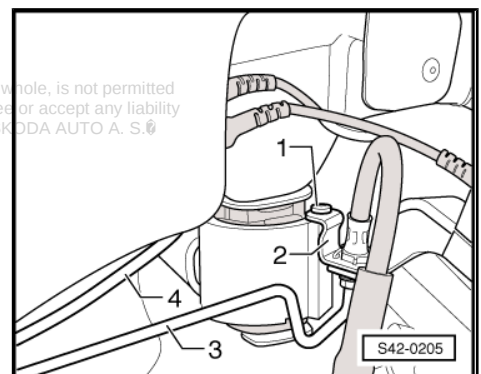
- Press the lever -2- in the -direction of the arrow- and while doing so unhook the hand-brake cable -3-.
- Slacken the spring bushing -1- for the hand-brake cable from the bracket on the brake caliper.



Continued for all vehicles

- Remove screw for hand brake cable holder from trailing arm.

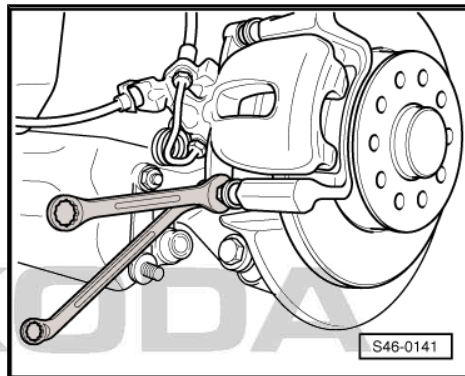
- Release screw -1-.
- Remove the bracket -2- with brake line -3-.
- Unclip brake lines -3- and -4-.



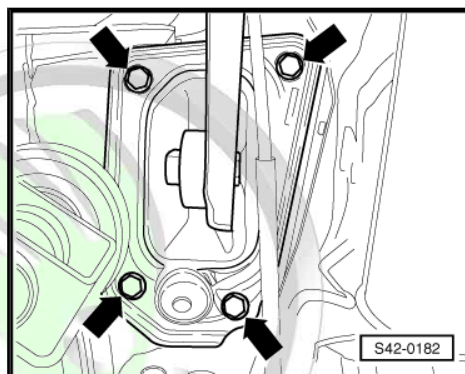
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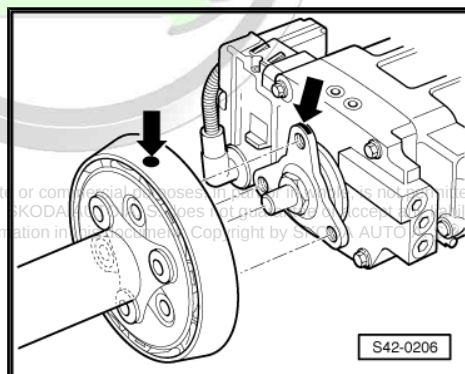
- Remove the brake calipers with brake carriers and hook on the body (e.g. with wire) ⇒ Brake systems; Rep. gr. 46 .



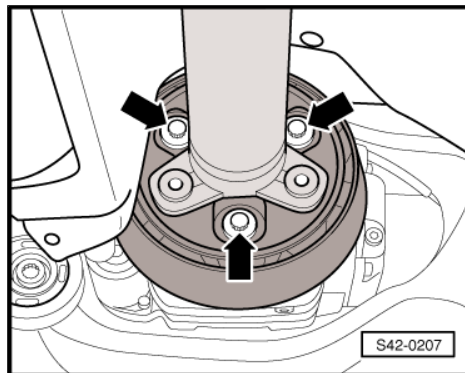
- Mark the installed position of the bracket on the body.
- Remove screws -arrows-.



- Check, if a marking (colour point) is present on the flexible disk and at the flange on the final drive -arrows-. If no marking is present, mark -arrows- opposite position of the flexible disk/ flange on the rear final drive.

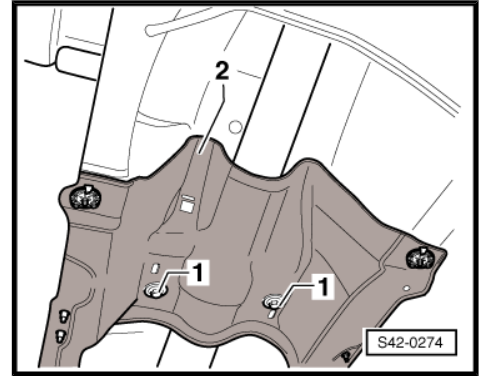


- Remove rear cardan shaft pipe with flexible disk and oscillation damper from rear final drive -arrows-.



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- Loosen combination screws for propshaft middle bearing -1- by two turns (the combination screws also hold the heat protection plate -2-).

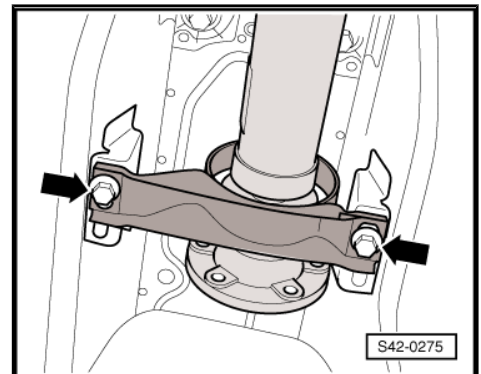


- This will allow you to see the combination screws for middle bearing -arrows- without the heat protection plate.

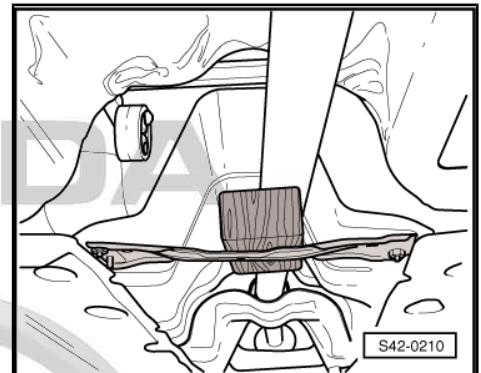


Note

- ◆ For the purposes of clear presentation the propshaft middle bearing and the combination screws -arrows- are shown without the heat protection plate.
- ◆ Propshaft with inseparable middle bearing as of 06/2007.



- Support propshaft on the tunnel bridge with a wooden wedge.
- Push the rear propshaft pipe as far as possible in direction of gearbox.

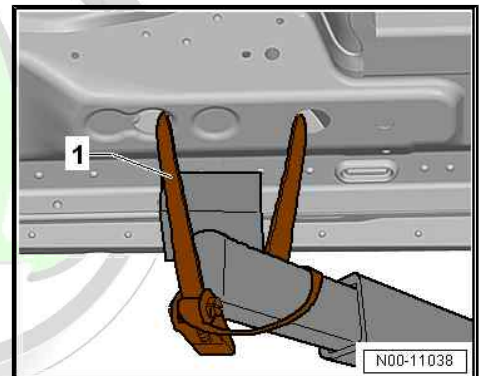


- Lash the vehicle to the lift platform using the tensioning straps - T10038- .



WARNING

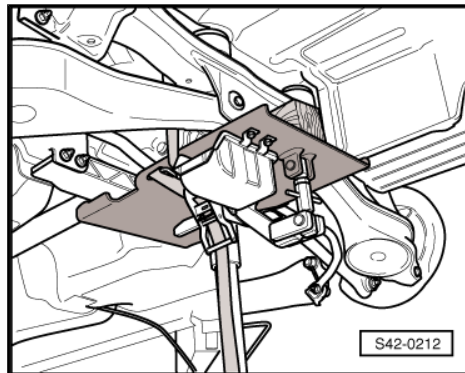
If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



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- Place engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with gearbox mount - V.A.G 1359/2- beneath the assembly carrier and secure with tensioning strap .

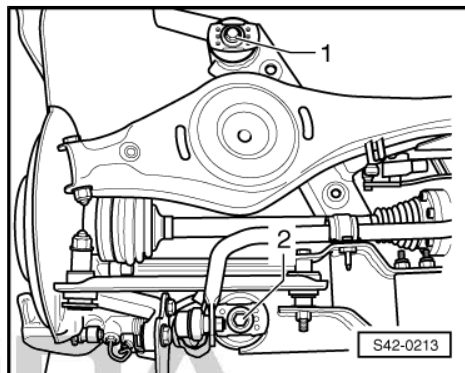


- Remove screw -1- or -2- on both sides.



Note

To provide a clearer illustration, only the left vehicle side is illustrated.



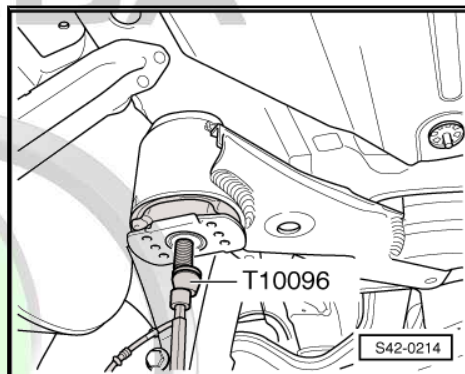
- Fix the position of the assembly carrier using fixing devices - T10096- .



Note

The locating pin - T10096- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Successively replace the fixing bolts at the assembly carrier on both sides with fixing devices - T10096- and tighten to 20 Nm.
- Carefully lower assembly carrier to maximum 30 mm.



Note

When lowering, make sure that there is adequate clearance of the brake lines, electrical wires and centering stud to the prop-shaft.

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- Unclip the brake lines -2- from the clips -1- and the bracket -3-.



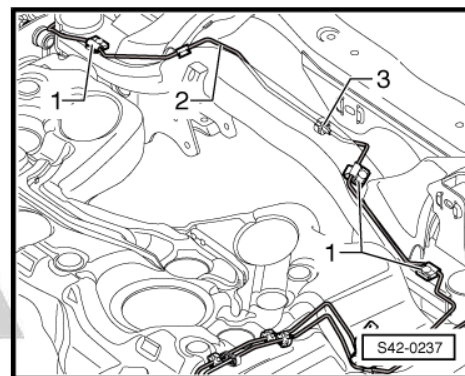
Note

The fig. shows the assembly carrier from above and in the removed condition for purposes of clear presentation.

- Lowering assembly carrier with attached parts.

Installing

Installation is carried out in reverse order of removal. When installing, note the following:



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the shock absorber and the wheel-bearing housing, which must be installed again when reinstalling.

Install propshaft at rear final drive ⇒ Gearbox; Rep. gr. 39 .

- Carry out axle alignment ⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle; vehicles with four-wheel drive”, page 202](#)
- ◆ ⇒ [“2.1.3 Summary of components: assembly carrier, final drive, vehicles with four-wheel drive”, page 205](#)
- ◆ ⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)
- ◆ ⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)
- ◆ ⇒ [“5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive”, page 249](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Cardan shaft ⇒ Gearbox; Rep. gr. 39
- ◆ Brake calipers with brake carrier ⇒ Brake systems; Rep. gr. 46 .
- ◆ Rear silencer ⇒ Engine; Rep. gr. 26



2 Subframe, control arm, tie rod for rear axle

⇒ [“2.1 Summary of components- assembly carrier”, page 198](#)

⇒ [“2.2 Repairing assembly carrier”, page 206](#)

⇒ [“2.3 Removing and installing top suspension arm”, page 220](#)

⇒ [“2.4 Removing and installing bottom suspension arm”, page 223](#)

⇒ [“2.5 Removing and installing track rod for rear axle”, page 227](#)

⇒ [“2.6 Removing and installing bracket for the speed sensor cable”, page 230](#)

2.1 Summary of components- assembly carrier

⇒ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)

⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)

⇒ [“2.1.3 Summary of components: assembly carrier, final drive, vehicles with four-wheel drive”, page 205](#)

2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive

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1 - Eccentric bolt

- ☐ after undoing, carry out an axle alignment
⇒ ["3.3 Axle alignment", page 309](#)
- ☐ do not turn more than 90° to the right or to the left (i.e. smallest to largest adjustment possibility)

2 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 95 Nm

3 - Eccentric washer

- ☐ Inner hole with lug

4 - Eccentric bolt

- ☐ after undoing, carry out an axle alignment
⇒ ["3.3 Axle alignment", page 309](#)
- ☐ do not turn more than 90° to the right or to the left (i.e. smallest to largest adjustment possibility)

5 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 95 Nm

6 - Eccentric washer

- ☐ Inner hole with lug

7 - Assembly carrier

- ☐ Removing and installing
⇒ ["1.2.1 Removing and installing rear axle, vehicles with front-wheel drive", page 186](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

8 - Screw

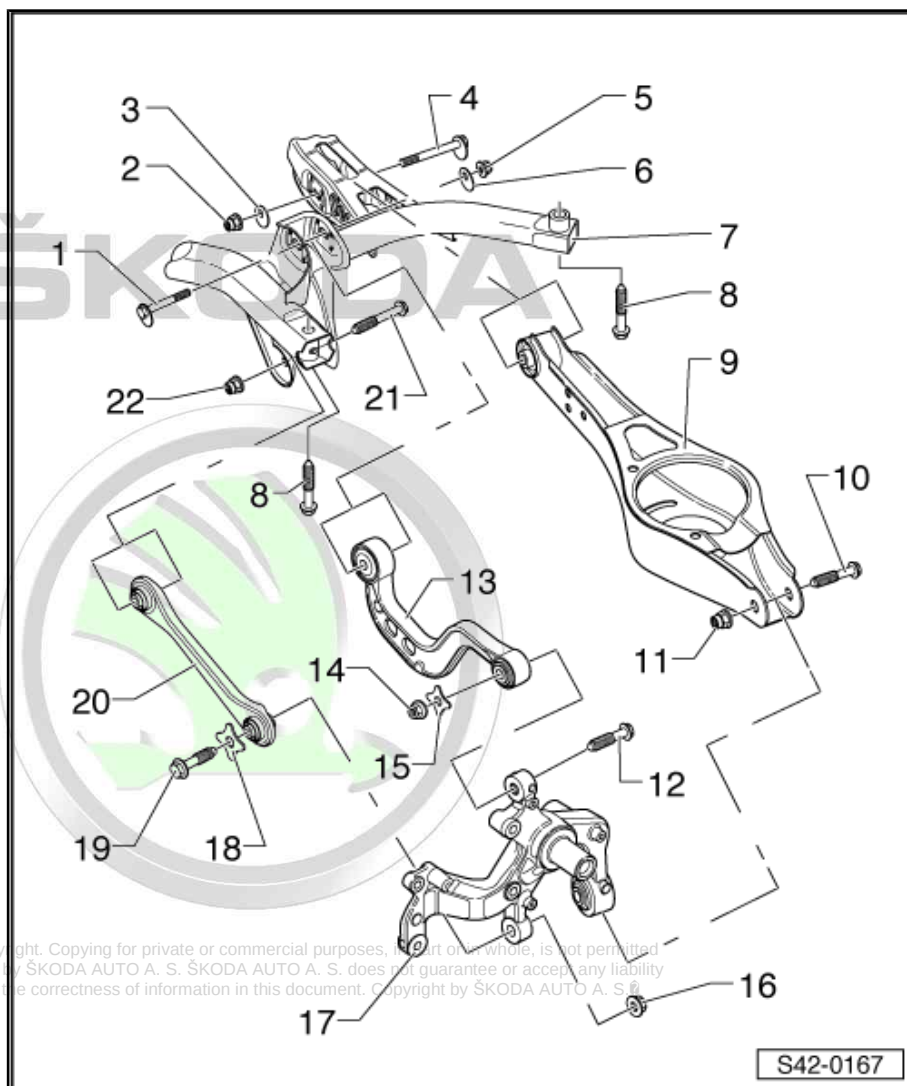
- ☐ replace after each removal
- ☐ 70 Nm + 180°

9 - Bottom suspension arm

- ☐ Removing and installing
⇒ ["2.4.1 Removing and installing bottom suspension arm, vehicles with front-wheel drive", page 223](#)

10 - Screw

- ☐ replace after each removal





11 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ Tightening torque can be applied via the screw Pos. 10
- ☐ 70 Nm + 180°

12 - Screw

- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 130 Nm + 180°

13 - Top suspension arm

- ☐ Removing and installing
⇒ ["2.3.1 Removing and installing top suspension arm, vehicles with front-wheel drive", page 220](#)

14 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ The tightening torque must be applied via the screw Pos. 12, in order not to put the bearing under tension

15 - Supporting plate

16 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ The tightening torque must be applied via the screw Pos. 19, in order not to put the bearing under tension
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)

17 - Wheel bearing housing

- ☐ Removing and installing
⇒ ["5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive", page 246](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

18 - Supporting plate

19 - Screw

- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 130 Nm + 180°

20 - Track rod for rear axle

- ☐ different versions ⇒ [Fig. "Track rod versions", page 201](#)
- ☐ closed in direction of travel (track rods on the right and left differ)
- ☐ opened towards the bottom (track rods on the right and left are identical)
- ☐ combined installation is not allowed
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ ["2.5.1 Removing and installing track rod for rear axle, vehicles with front-wheel drive", page 227](#)

21 - Screw

- ☐ replace after each removal

22 - Nut

- ☐ self-locking
- ☐ replace after each removal

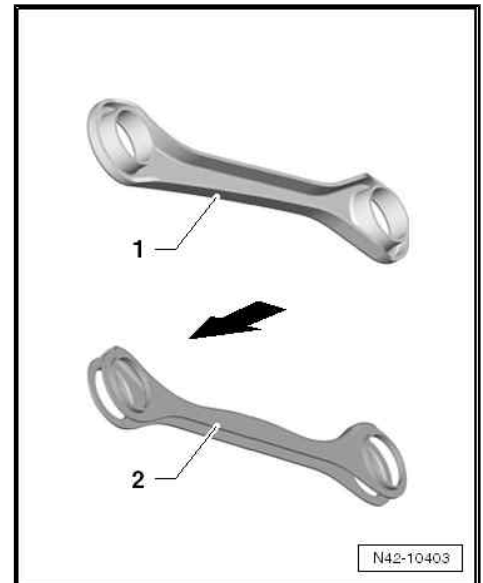
- ❑ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ❑ 70 Nm + 180°

Track rod versions

1 - Track rod closed in direction of travel (track rods on the right and left differ)

2 - Track rod opened towards the bottom (track rods on the right and left are identical)

- ◆ The -arrow- shows the direction of travel.
- ◆ A combined installation of the track rod versions -1- and -2- is allowed.
- ◆ Pay attention to correct installation position.



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2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive

The -arrow- shows the direction of travel.

1 - Eccentric bolt

- ☐ after undoing, carry out an axle alignment
⇒ ["3.3 Axle alignment", page 309](#)
- ☐ do not turn more than 90° to the right or to the left (i.e. smallest to largest adjustment possibility)

2 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 95 Nm

3 - Eccentric washer

- ☐ Inner hole with lug

4 - Eccentric bolt

- ☐ after undoing, carry out an axle alignment
⇒ ["3.3 Axle alignment", page 309](#)
- ☐ do not turn more than 90° to the right or to the left (i.e. smallest to largest adjustment possibility)

5 - Eccentric washer

- ☐ Inner hole with lug

6 - Nut

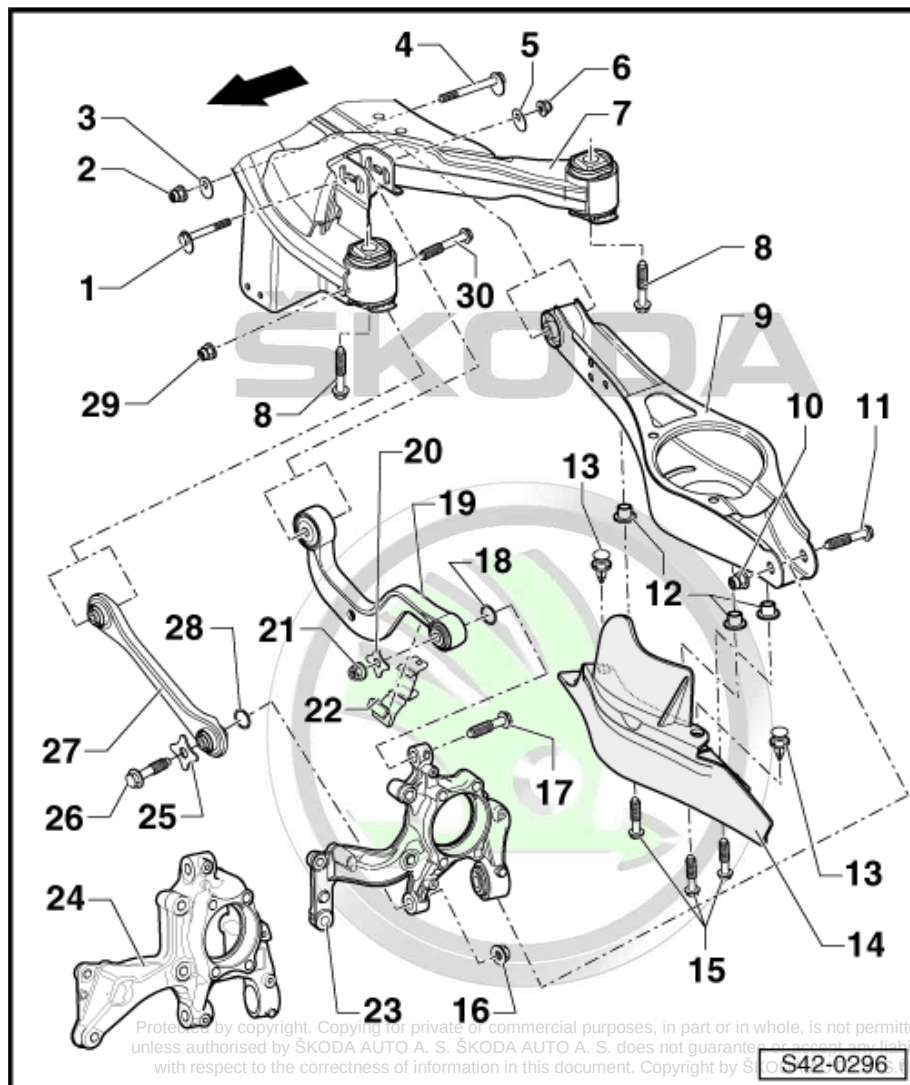
- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ 95 Nm

7 - Assembly carrier

- ☐ Removing and installing
⇒ ["1.2.2 Removing and installing the rear axle, vehicles with four-wheel drive", page 191](#)
- ☐ up to 05/2007 aluminium version
- ☐ as of 06/2007 steel version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

8 - Screw

- ☐ replace after each removal
- ☐ 70 Nm + 180°



9 - Bottom suspension arm

- ☐ Removing and installing
⇒ [“2.4.2 Removing and installing bottom suspension arm, vehicles with four-wheel drive”, page 225](#)

10 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ Tightening torque can be applied via the screw Pos. 11
- ☐ 70 Nm + 180°

11 - Screw

- ☐ replace after each removal

12 - Threaded rivet

- ☐ M6

13 - Body-bound rivet

14 - Protection plate

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

15 - Screw

- ☐ 8 Nm

16 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ The tightening torque must be applied via the screw - Pos. 26, in order not to put the bearing under tension

17 - Screw

- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ 130 Nm + 180°

18 - Washer

- ☐ as of 06/2007 only in combination with the aluminium wheel bearing housing
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

19 - Top suspension arm

- ☐ Removing and installing
⇒ [“2.3.2 Removing and installing top suspension arm, vehicles with four-wheel drive”, page 221](#)

20 - Supporting plate

21 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ The tightening torque must be applied via the screw Pos. 17, in order not to put the bearing under tension

22 - Support

- ☐ for speed sensor cable
- ☐ clipped with top suspension arm
- ☐ Removing and installing
⇒ [“2.6 Removing and installing bracket for the speed sensor cable”, page 230](#)

23 - Wheel bearing housing

- ☐ up to 05/2007 steel casting version



- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ [“5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive”, page 254](#)

24 - Wheel bearing housing

- ☐ as of 06/2007 aluminium version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ [“5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive”, page 254](#)

25 - Supporting plate

26 - Screw

- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ 130 Nm + 180°

27 - Track rod for rear axle

- ☐ different versions ⇒ [Fig. “Track rod versions”, page 205](#)
- ☐ closed in direction of travel (track rods on the right and left differ)
- ☐ opened towards the bottom (track rods on the right and left are identical)
- ☐ combined installation is not allowed
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ [“2.5.2 Removing and installing track rod for rear axle, vehicles with four-wheel drive”, page 228](#)

28 - Washer

- ☐ as of 06/2007 only in combination with the aluminium wheel bearing housing
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

29 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 70 Nm + 180°

30 - Screw

- ☐ replace after each removal
- ☐ Always tighten bolted connections in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)



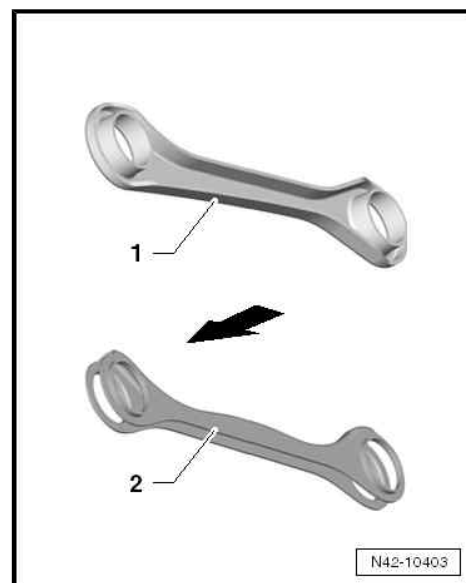
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Track rod versions

1 - Track rod closed in direction of travel (track rods on the right and left differ)

2 - Track rod opened towards the bottom (track rods on the right and left are identical)

- ◆ The -arrow- shows the direction of travel.
- ◆ A combined installation of the track rod versions -1- and -2- is allowed.
- ◆ Pay attention to correct installation position.



2.1.3 Summary of components: assembly carrier, final drive, vehicles with four-wheel drive

The -arrow- shows the direction of travel.

1 - Assembly carrier

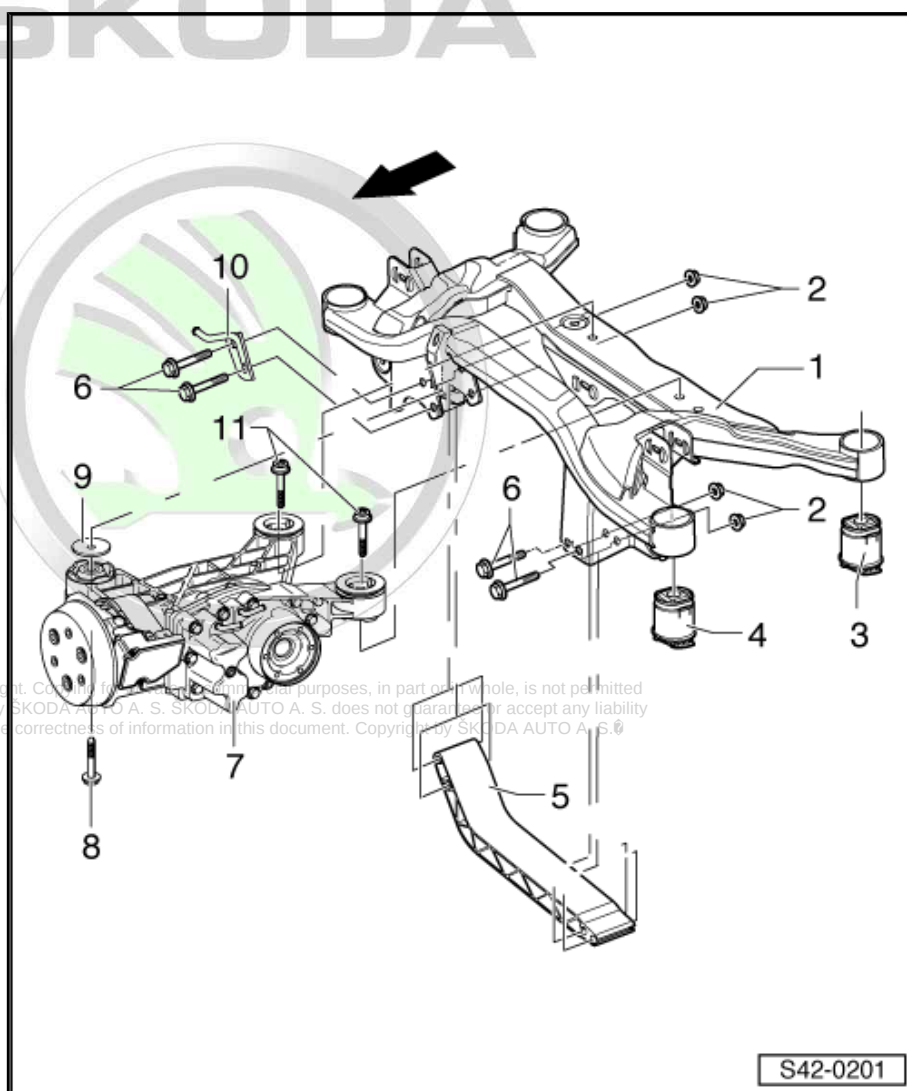
- ☐ Removing and installing
⇒ ["1.2.2 Removing and installing the rear axle, vehicles with four-wheel drive", page 191](#)
- ☐ up to 05/2007 aluminium version
- ☐ as of 06/2007 steel version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

2 - Nut

- ☐ no longer applicable as of 06/2007
- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ 50 Nm + 180°

3 - Rear rubber-metal bearing

- ☐ pressing out and in for aluminium assembly carrier
⇒ ["2.2.1 Rubber-metal bearings in and out, aluminium assembly carrier, four-wheel drive vehicles", page 206](#)
- ☐ pressing out and in for steel assembly carrier
⇒ ["2.2.3 Removing and installing bonded rubber](#)





[rear bearings, steel assembly carrier, four-wheel drive vehicles", page 215](#)

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

4 - Front rubber-metal bearing

- ☐ pressing out and in for aluminium assembly carrier
⇒ ["2.2.1 Rubber-metal bearings in and out, aluminium assembly carrier, four-wheel drive vehicles", page 206](#)
- ☐ pressing out and in for steel assembly carrier
⇒ ["2.2.2 Removing and installing bonded rubber bush at front, steel assembly carrier, vehicles with four-wheel drive", page 210](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

5 - Cross member

- ☐ no longer applicable as of 06/2007
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

6 - Screw

- ☐ no longer applicable as of 06/2007
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

7 - Final drive

- ☐ removing and installing ⇒ Gearbox; Rep. gr. 39 .

8 - Screw

- ☐ replace after each removal
- ☐ 60 Nm + 90°

9 - Supporting plate

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10 - Support

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

11 - Screw

- ☐ replace after each removal
- ☐ 60 Nm + 180°

2.2 Repairing assembly carrier

⇒ ["2.2.1 Rubber-metal bearings in and out, aluminium assembly carrier, four-wheel drive vehicles", page 206](#)

⇒ ["2.2.2 Removing and installing bonded rubber bush at front, steel assembly carrier, vehicles with four-wheel drive", page 210](#)

⇒ ["2.2.3 Removing and installing bonded rubber rear bearings, steel assembly carrier, four-wheel drive vehicles", page 215](#)

2.2.1 Rubber-metal bearings in and out, aluminium assembly carrier, four-wheel drive vehicles

Special tools and workshop equipment required

- ◆ Engine/gearbox jack , e.g. -V.A.G 1383/A-
- ◆ Hydraulic cylinder e.g. -VAS 6178-
- ◆ Foot pump , e. g. -VAS 6179-
- ◆ Tensioning strap - T10038-
- ◆ Fixing device - T10096-
- ◆ Assembly tool - T10263-

Extraction

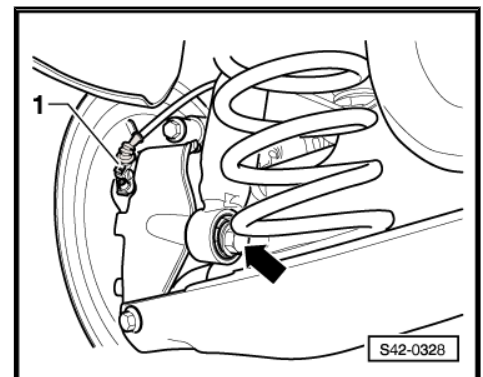
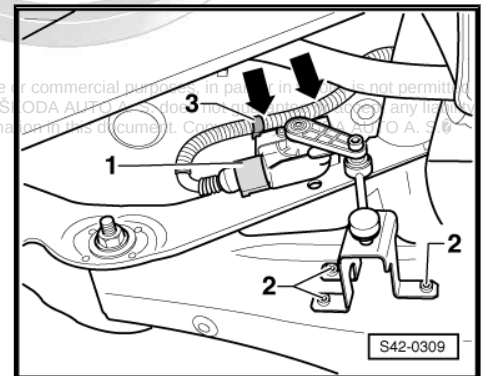
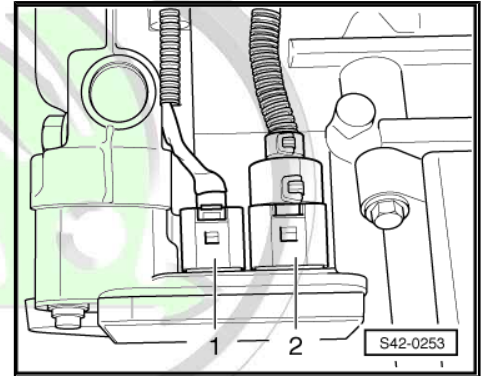
- Remove rear wheels.
- Remove coil springs
⇒ [“4.4 Removing and installing spring”, page 242](#) .
- Remove pre-exhaust pipe and rear silencer ⇒ Engine; Rep. gr. 26 .
- Disconnect the plug connection -2- at the control unit of the four-wheel drive clutch.

Vehicles with vehicle level sender

- Disconnect plug -1- and slacken line holder from the sender -3-.

Continued for all vehicles

- Disconnect the plug of the ABS speed sensor -1- from the wheel bearing housing.



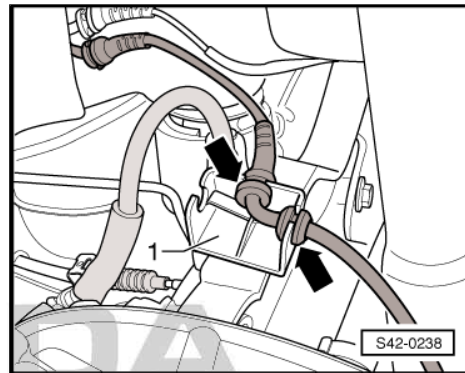


- Unclip the speed sensor cable -arrows- from the holder -1-.
- Removing anti-roll bar
⇒ [“3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive”, page 235](#) .
- Removing track rods
⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#) .
- Remove holder for brake line at the front assembly bearings.



Note

Do not disconnect the brake line.

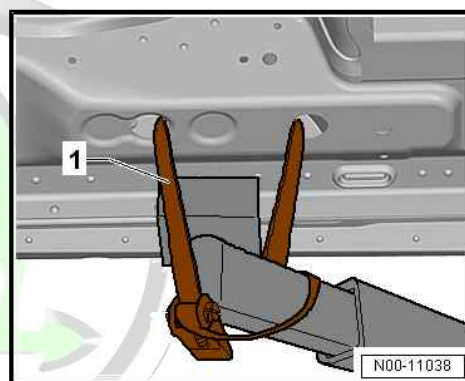


- Lash the vehicle on both sides to the supporting arms of the lift platform using tensioning straps - T10038- .



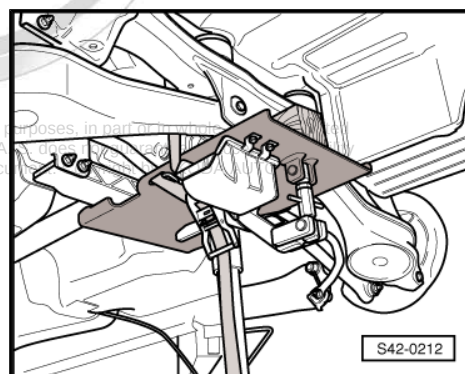
WARNING

If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



- Place engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with universal mount , e.g. -V.A.G 1359/2- beneath the assembly carrier and secure with tensioning strap.

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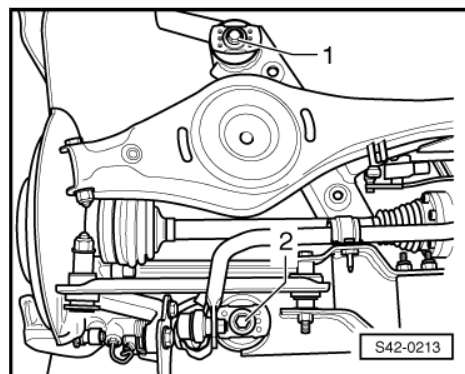


- Remove screw -1- or -2- on both sides.



Note

To provide a clearer illustration, only the left vehicle side is illustrated.

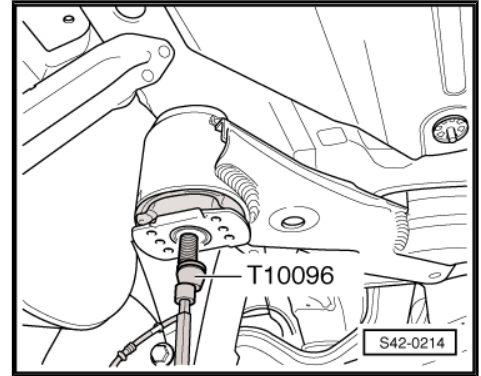


- Fix the position of the assembly carrier using fixing devices - T10096- .

i Note

The locating pin - T10096- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Lower the assembly carrier with engine/gearbox jack e.g. - V.A.G 1383A- Or -VAS6931- by approx. 10 cm.

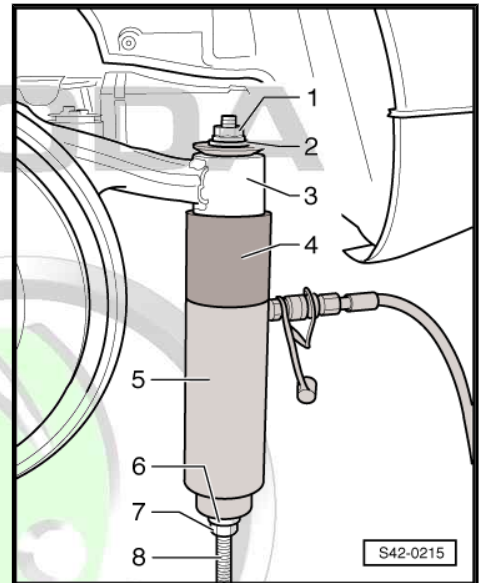


- Position the special tools as shown in the figure.

- 1 - Nut - T10263/1-
- 2 - Washer , commercially available
- 3 - Assembly carrier
- 4 - Pipe section - T10263/1-
- 5 - Hydraulic cylinder e.g. -VAS 6178-
- 6 - Washer , commercially available
- 7 - Nut - T10263/1-
- 8 - Screw - T10263/4-

- Pretension special tool.

- Pull out the rubber-metal bearing by actuating the pump.



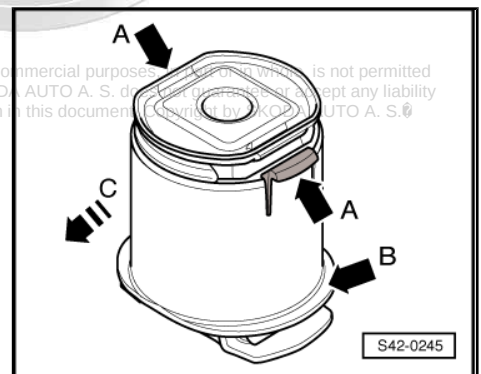
Installing

Installation is carried out in the reverse order; pay attention to the following points:

The front and rear rubber-metal bearing differ only slightly in the overall height. When installing, pay attention to correct assignment ⇒ Electronic catalogue of original parts .

The rubber-metal bearing must be installed in direction of orientation.

The tabs of the outer sleeve -arrows A- must point transversely to the direction of travel -arrow C-.





- Insert special tool together with rubber-metal bearing as shown in the assembly carrier.



Caution

The pressure plate - T10263/3- must be laid in such a way that the tabs align the outer sleeve of the rubber-metal bearing -arrow A- with the window at the pressure plate - T10263/3- -arrow B-.

This positioning is absolutely necessary, as the tabs interlock in the area of the window with the bearing seat after removing the rubber-metal bearing.

- 1 - Nut - T10263/1-
 - 2 - Washer , commercially available
 - 3 - Thrust piece - T10263/3-
 - 4 - Assembly carrier
 - 5 - Rubber-metal bearing
 - 6 - Thrust piece - T10263/2-
 - 7 - Hydraulic cylinder e.g. -VAS 6178-
 - 8 - Washer , commercially available
 - 9 - Nut - T10263/1-
 - 10 - Screw - T10263/4-
- Pretension special tool with rubber-metal bearing.
 - Carefully install the rubber-metal bearing by actuating the pump, until the collar -arrow B- rests "free of gap" against the assembly carrier.

- Carry out axle alignment ⇒ **"3.3 Axle alignment", page 309**.

Tightening torques - summaries of components



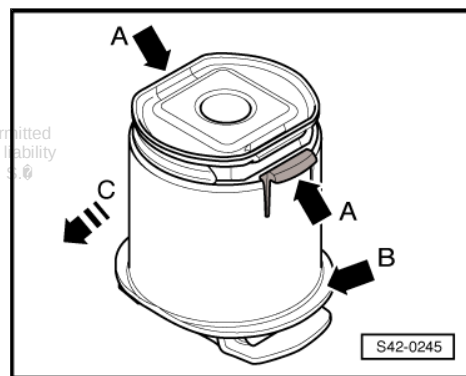
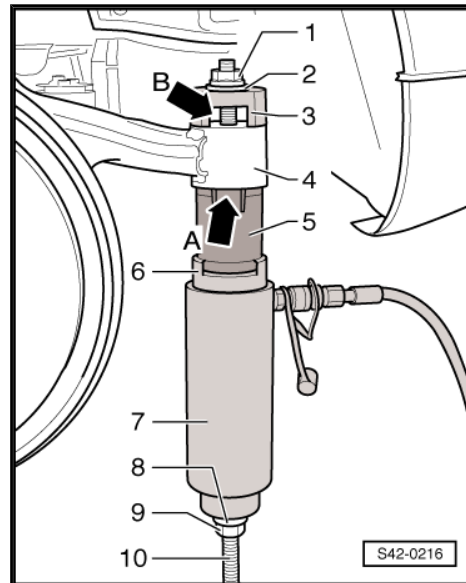
Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ ["2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202](#)
- ♦ ⇒ ["3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233](#)
- ♦ ⇒ ["4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive", page 240](#)
- ♦ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ♦ Rear silencer ⇒ Engine; Rep. gr. 26

2.2.2 Removing and installing bonded rubber bush at front, steel assembly carrier, vehicles with four-wheel drive

Special tools and workshop equipment required



- ◆ Tensioning strap - T10038-
- ◆ Fixing device - T10096-
- ◆ Assembly tool - T10263-
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Hydraulic cylinder e.g. -VAS 6178-
- ◆ Foot pump , e. g. -VAS 6179-

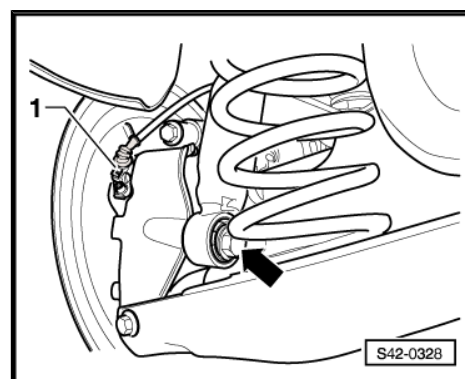
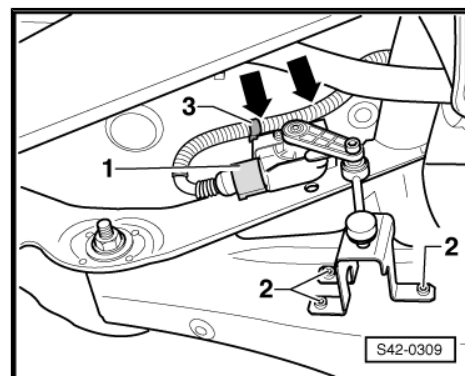
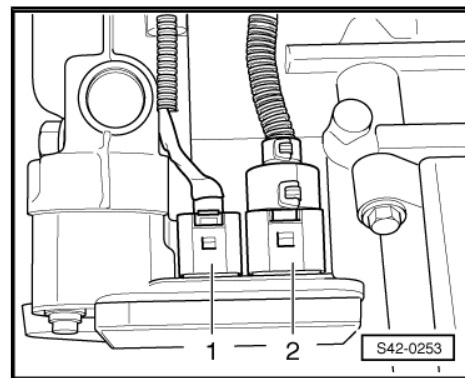
Extraction

- Remove rear wheels.
- Remove coil springs
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Remove the rear silencer ⇒ Engine; Rep. gr. 26 .
- Disconnect the plug connection -2- at the control unit of the four-wheel drive clutch.

Vehicles with vehicle level sender

- Disconnect plug -1- and slacken line holder from the sender -3-.

Continued for all vehicles



- Disconnect the plug of the ABS speed sensor -1- from the wheel bearing housing.
- Unclip the speed sensor cable from the bracket at the top suspension arm.
- Removing anti-roll bar
⇒ ["3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive", page 235](#) .
- Removing track rods
⇒ ["2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202](#) .

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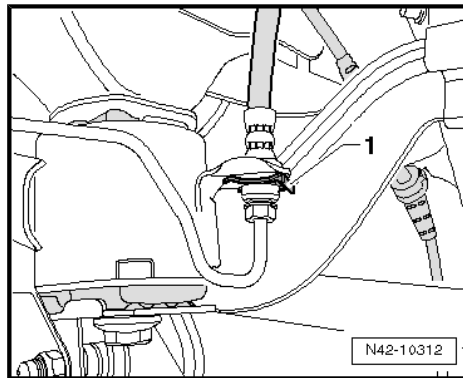


- Remove bracket - 1 -.



Note

Do not disconnect the brake line.

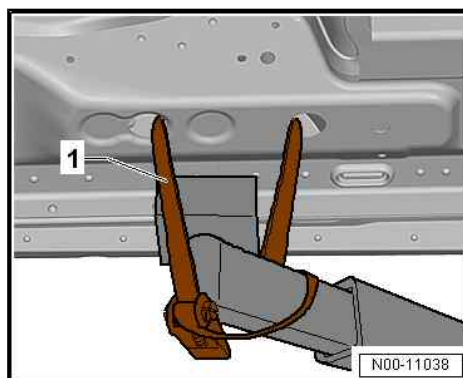


- Lash the vehicle on both sides to the supporting arms of the lift platform using tensioning straps - T10038- .

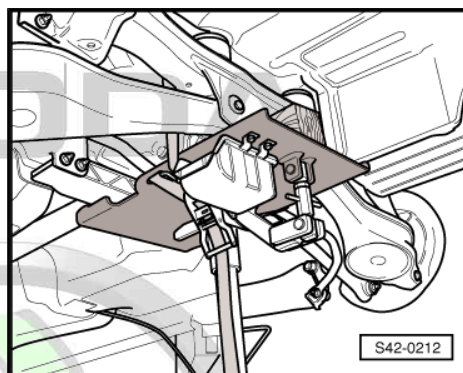


WARNING

If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



- Place engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with universal mount , e.g. -V.A.G 1359/2- beneath the assembly carrier and secure with tensioning strap.



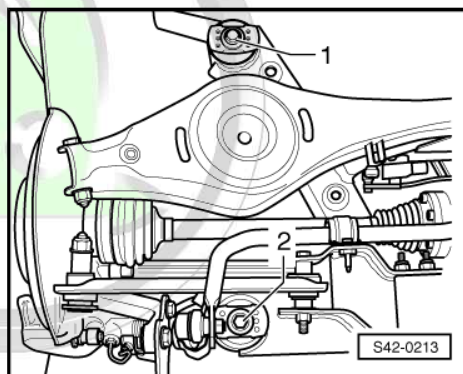
- Remove screw -1- or -2- on both sides.



Note

To provide a clearer illustration, only the left vehicle side is illustrated.

In order to fix the assembly carrier, the fixing devices - T10096- must be successively screwed into the positions -1- and -2- on both vehicle sides.



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- Fix the position of the assembly carrier using fixing devices - T10096- .

i Note

The locating pin - T10096- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Successively replace the fixing bolts at the assembly carrier on both sides with fixing devices - T10096- and tighten to 20 Nm.

The position of the assembly carrier is now fixed.

- Lower the assembly carrier with engine/gearbox jack e.g. - V.A.G 1383A- Or -VAS6931- by approx. 10 cm.
- Mark the position of the rubber-metal bearing to the assembly carrier e.g. with a felt-tip pen.

- Position the special tools as shown in the figure.

1 - Nut - T10263/5-

2 - Washer out -T10263-

3 - Pipe section - T10263/6-

4 - Hydraulic cylinder e.g. -VAS 6178-

5 - Nut - T10263/5-

6 - Screw - T10263/4-

- Pretension special tool.

- Pull out the rubber-metal bearing by actuating the pump.

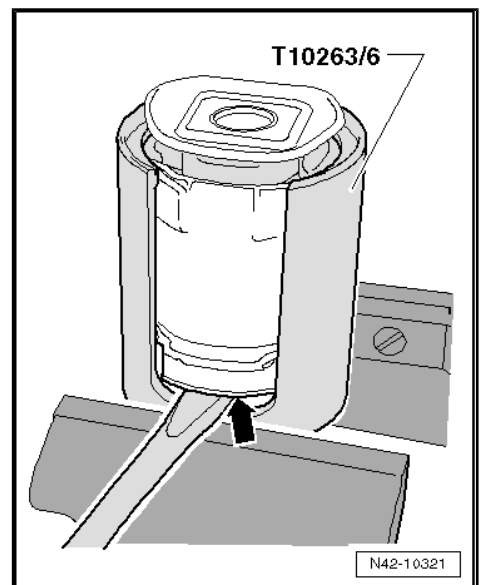
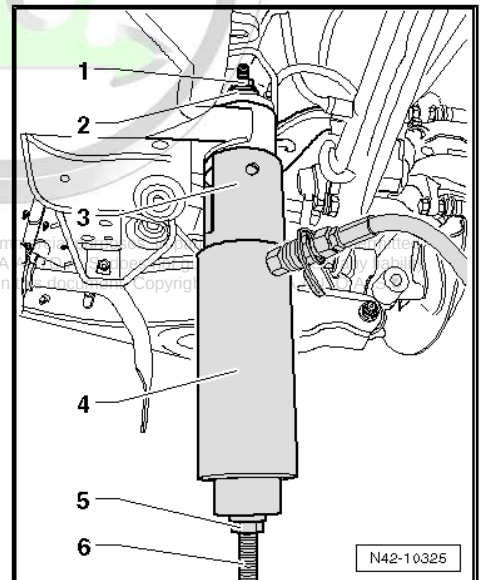
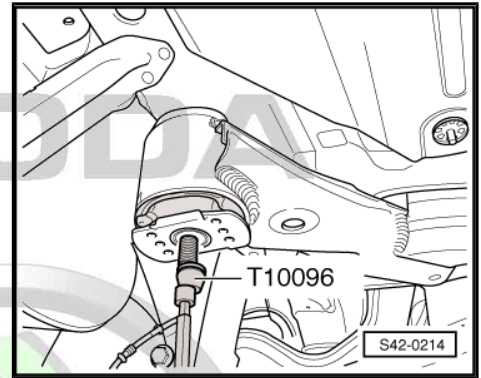
i Note

When pulling out the rubber-metal bearing, the outer ring of the bearing is sheared off. This is done with a loud bang.

- After pulling out the rubber-metal bearing, it must be removed from the pipe section - T10263/6- .
- Clamp pipe section - T10263/6- on the surfaces provided in a vice.
- Lever between the pipe section - T10263/6- and the rubber-metal bearing -arrow- using a screwdriver and drive out the rubber-metal bearing; if necessary slightly knock onto the drift with a hammer.

Installing

Installation is carried out in the reverse order. Pay attention to the following:





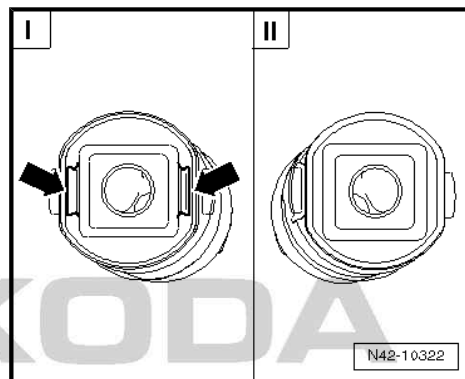
Distinguishing feature of the rubber-metal bearing

I - Front rubber-metal bearing

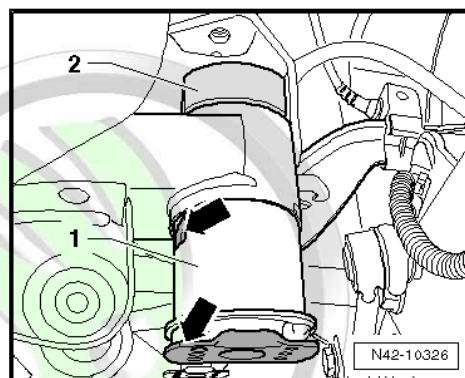
II - Rear rubber-metal bearing

The front rubber-metal bearings have two recesses on the top side -arrows- and differ only slightly in the overall height ⇒ Electronic Catalogue of Original Parts .

The rubber-metal bearing must be installed in a certain direction; the markings on the assembly carrier should be noted.

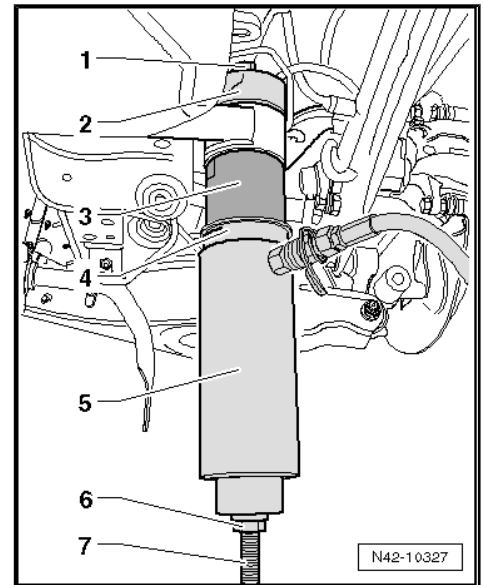


- Insert rubber-metal bearing -1- into the assembly carrier in such a way, that the recess and the panel -arrows- point transversely to the direction of travel.
- Position pressure plate - T10263/3- -2- in such a way, that the flattened side also points transversely to the direction of travel.



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- Insert special tool together with rubber-metal bearing as shown in the assembly carrier.
- 1 - Nut - T10263/5-
- 2 - Thrust piece - T10263/3-
- 3 - Rubber-metal bearing
- 4 - Thrust piece - T10263/2-
- 5 - Hydraulic cylinder e.g. -VAS 6178-
- 6 - Nut - T10263/5-
- 7 - Screw - T10263/4-
- Pretension special tool with rubber-metal bearing.
- Carefully install the rubber-metal bearing by actuating the pump, until the collar rests »free of gap« against the assembly carrier.
- Install track rods
⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#).
- Install anti-roll bar
⇒ [“3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive”, page 235](#).
- Mount plug between rear axle and body.
- Install the rear silencer ⇒ Engine; Rep. gr. 26.
- Installing the helical springs
⇒ [“4.4 Removing and installing spring”, page 242](#).
- Attach rear wheels.



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)
- ◆ ⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)
- ◆ ⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Rear silencer ⇒ Engine; Rep. gr. 26

2.2.3 Removing and installing bonded rubber rear bearings, steel assembly carrier, four-wheel drive vehicles

Special tools and workshop equipment required

- ◆ Tensioning strap - T10038-
- ◆ Fixing device - T10096-
- ◆ Assembly tool - T10263-



- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-
- ◆ Hydraulic cylinder e.g. -VAS 6178-
- ◆ Foot pump , e. g. -VAS 6179-

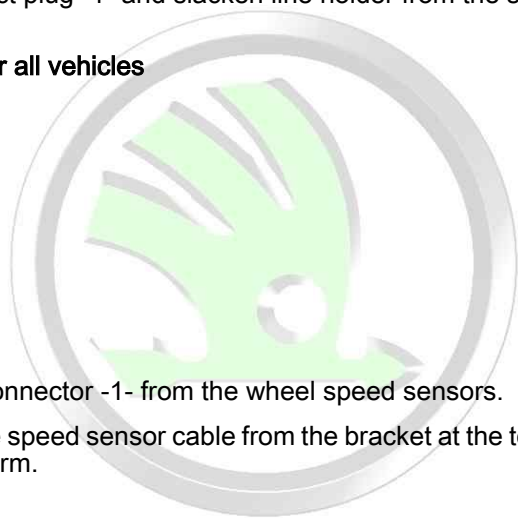
Extraction

- Remove rear wheels.
- Remove coil springs
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Remove the rear silencer ⇒ Engine; Rep. gr. 26 .

Vehicles with vehicle level sender

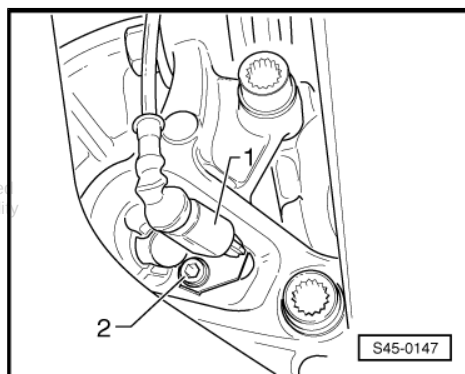
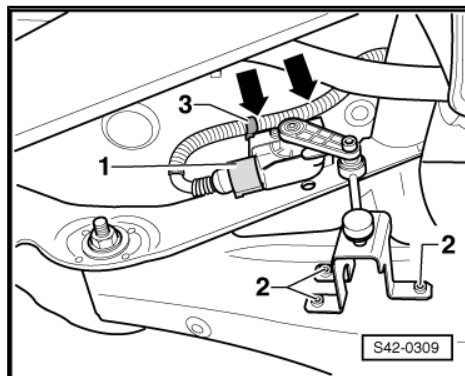
- Disconnect plug -1- and slacken line holder from the sender -3-.

Continued for all vehicles



- Unplug connector -1- from the wheel speed sensors.
- Unclip the speed sensor cable from the bracket at the top suspension arm.

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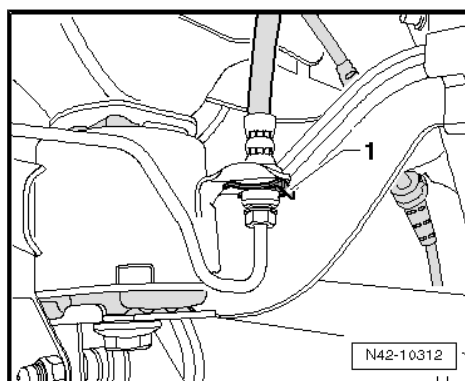


- Remove bracket - 1 -.



Note

Do not disconnect the brake line.

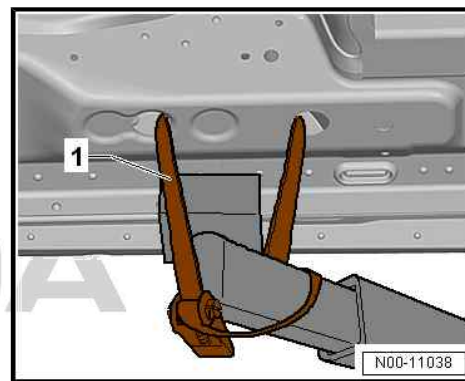


- Lash the vehicle on both sides to the supporting arms of the lift platform using tensioning straps - T10038- .

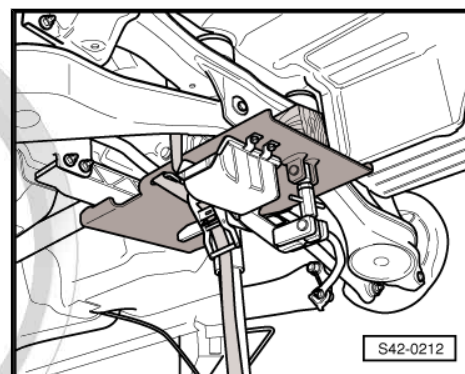


WARNING

If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



- Place engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- with universal mount , e.g. -V.A.G 1359/2- beneath the assembly carrier and secure with tensioning strap.



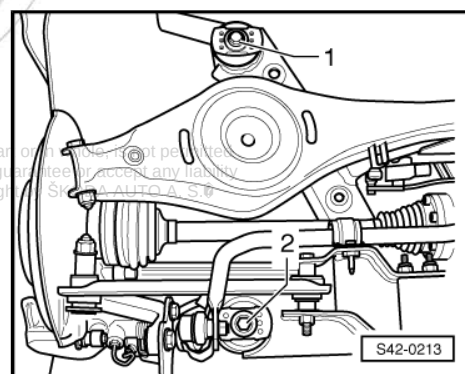
- Remove screw -1- or -2- on both sides of the assembly carrier.



Note

To provide a clearer illustration, only the left vehicle side is illustrated.

In order to fix the assembly carrier, the fixing devices - T10096- must be successively screwed into the positions -1- and -2- on both vehicle sides.



- Fix the position of the assembly carrier using fixing devices - T10096- .



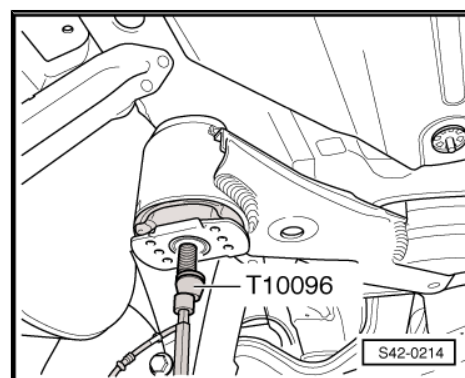
Note

The locating pin - T10096- must only be tightened to maximum 20 Nm as otherwise the fixing bolt thread becomes damaged.

- Successively replace the fixing bolts at the assembly carrier on both sides with fixing devices - T10096- and tighten to 20 Nm.

The position of the assembly carrier is now fixed.

- Lower the assembly carrier with engine/gearbox jack e.g. - V.A.G 1383A- Or -VAS6931- by approx. 10 cm.
- Mark the position of the rubber-metal bearing to the assembly carrier e.g. with a felt-tip pen.





- Position the special tools as shown in the figure.
- 1 - Nut - T10263/5-
- 2 - Washer out -T10263-
- 3 - Pipe section - T10263/6-
- 4 - Hydraulic cylinder e.g. -VAS 6178-
- 5 - Nut - T10263/5-
- 6 - Screw - T10263/4-
- Pretension special tool.
- Pull out the rubber-metal bearing by actuating the pump.



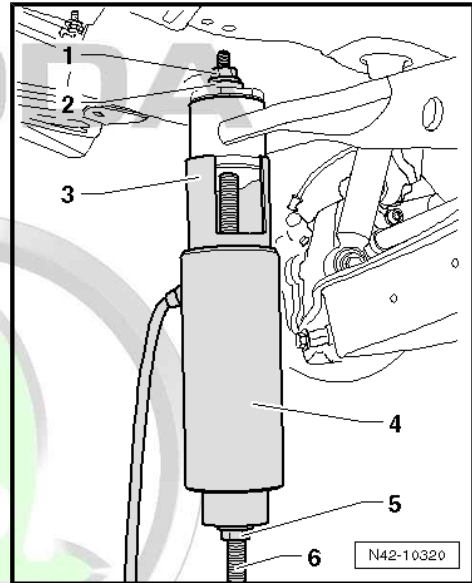
Note

When pulling out the rubber-metal bearing, the outer ring of the bearing is sheared off. This is done with a loud bang.

- After pulling out the rubber-metal bearing, it must be removed from the pipe section - T10263/6- .
- Clamp pipe section - T10263/6- on the surfaces provided in a vice.
- Lever between the pipe section - T10263/6- and the rubber-metal bearing -arrow- using a screwdriver and drive out the rubber-metal bearing; if necessary slightly knock onto the drift with a hammer.

Installing

Installation is carried out in the reverse order. Pay attention to the following:



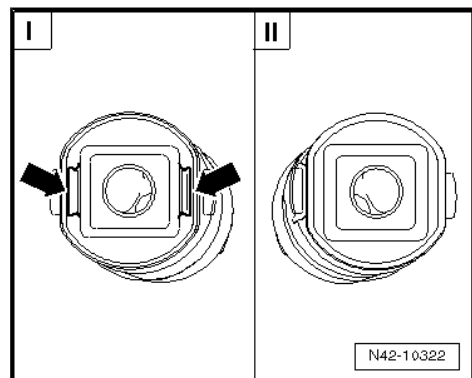
Distinguishing feature of the rubber-metal bearing

I - Front rubber-metal bearing

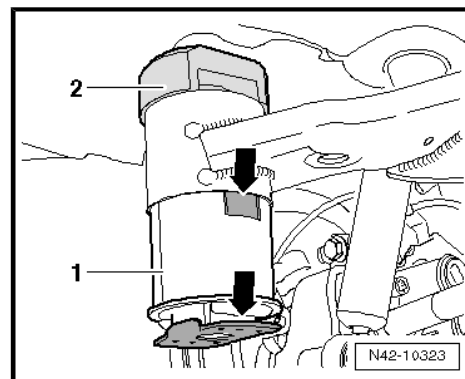
II - Rear rubber-metal bearing

The front rubber-metal bearings have two recesses on the top side -arrows- and differ only slightly in the overall height ⇒ Electronic Catalogue of Original Parts .

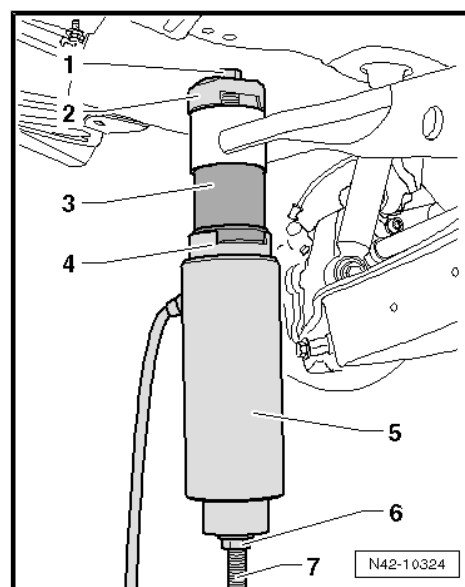
The rubber-metal bearing must be installed in a certain direction; the markings on the assembly carrier should be noted.



- Insert rubber-metal bearing -1- into the assembly carrier in such a way, that the recess and the panel -arrows- point transversely to the direction of travel.
- Position pressure plate - T10263/3- -2- in such a way, that the flattened side also points transversely to the direction of travel.



- Insert special tool together with rubber-metal bearing as shown in the assembly carrier.
- 1 - Nut - T10263/5-
2 - Thrust piece - T10263/3-
3 - Rubber-metal bearing
4 - Thrust piece - T10263/2-
5 - Hydraulic cylinder e.g. -VAS 6178-
6 - Nut - T10263/5-
7 - Screw - T10263/4-
- Pretension special tool with rubber-metal bearing.
 - Carefully install the rubber-metal bearing by actuating the pump, until the collar rests »free of gap« against the assembly carrier.
 - Install the rear silencer ⇒ Engine; Rep. gr. 26 .
 - Installing the helical springs
⇒ [“4.4 Removing and installing spring”, page 242](#) .
 - Attach rear wheels.



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)
- ◆ ⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)
- ◆ ⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Rear silencer ⇒ Engine; Rep. gr. 26

2.3 Removing and installing top suspension arm

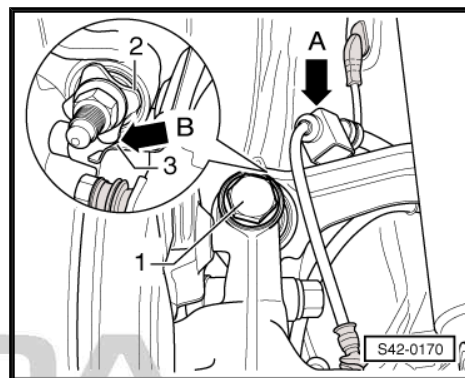
⇒ [“2.3.1 Removing and installing top suspension arm, vehicles with front-wheel drive”, page 220](#)

⇒ [“2.3.2 Removing and installing top suspension arm, vehicles with four-wheel drive”, page 221](#)

2.3.1 Removing and installing top suspension arm, vehicles with front-wheel drive

Removing

- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove wheel.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#) .
- Unhook cable -arrow A- for wheel speed sensor at top suspension arm.
- Release screw -1-.

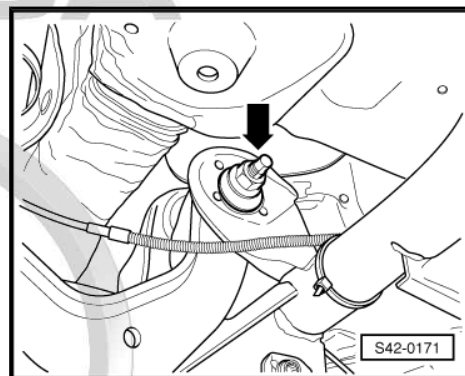


- For example mark with a felt-tip pen the position of the eccentric bolt -arrow- to the assembly carrier.
- Unscrew screw -arrow-.
- Remove top suspension arm.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert top suspension arm into the vehicle and tighten the screws by hand.



Note

The bolted connection of the top suspension arm must only be performed, if the measured dimension “a” between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

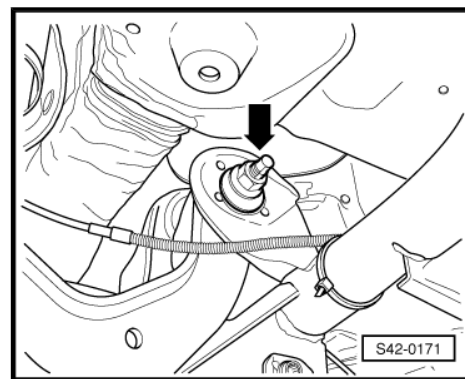
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)

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- Screw top suspension arm onto the assembly carrier and tighten the nut.

Observe the marked marking of the position of the eccentric bolt -arrow- to the assembly carrier!

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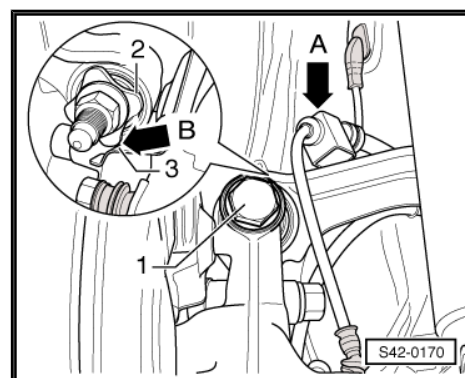
- Tighten screw -1- for top suspension arm at wheel-bearing housing. The tightening torque must be applied via the screw, in order not to put the bearing under tension.



Note

The washer -2- must be fitted so that there is -arrow B- a gap between the washer and the cover plate -3-

- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ➔ Maintenance ; Booklet Octavia II .
- Carry out axle alignment ➔ [“3.3 Axle alignment”, page 309](#) .



Tightening torques - summaries of components



Note

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Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ➔ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ◆ ➔ [“1.2 Tightening torque of the wheel screws”, page 301](#)

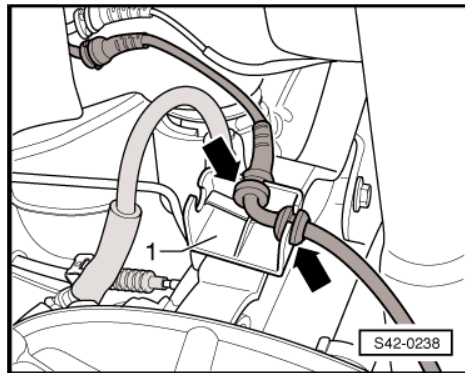
2.3.2 Removing and installing top suspension arm, vehicles with four-wheel drive

Removing

- Determine dimension “a”
➔ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove wheel.
- Remove coil spring
➔ [“4.4 Removing and installing spring”, page 242](#) .



- Unhook speed sensor cable from holder -1- at top suspension arm -arrows-.

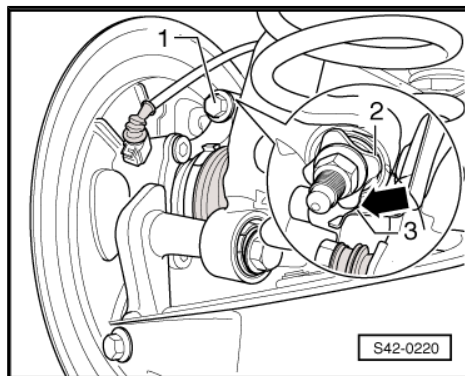


- Release screw -1-.



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the top suspension arm and the wheel-bearing housing, which must be installed again when re-installing.



- For example mark with a felt-tip pen the position of the eccentric bolt -arrow- to the assembly carrier.
- Unscrew screw -arrow-.
- Remove top suspension arm.

Installing

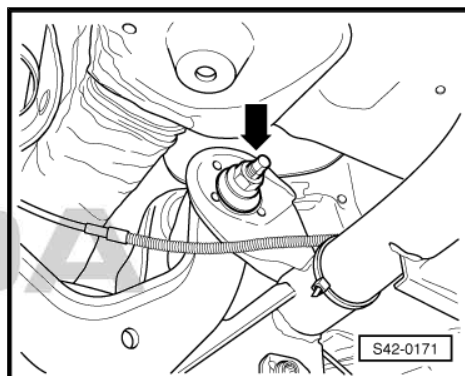
Installation is performed in the reverse order, pay attention to the following points:



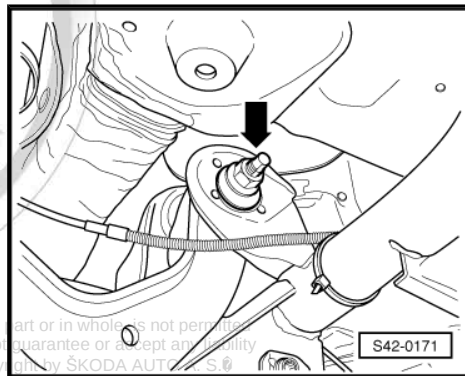
Note

The bolted connection of the top suspension arm must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.



- Screw top suspension arm onto the assembly carrier and tighten the nut.
- Observe the marked marking of the position of the eccentric bolt -arrow- to the assembly carrier!

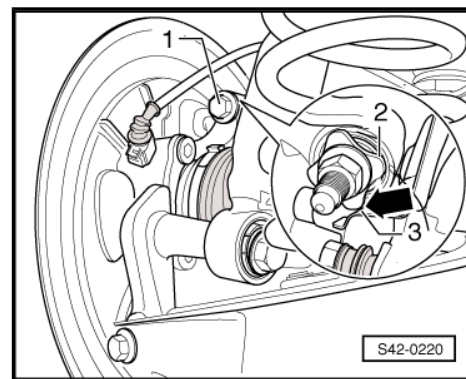


- Tighten screw -1- for top suspension arm at wheel-bearing housing. The tightening torque must be applied via the screw, in order not to put the bearing under tension.



Note

- ◆ The washer -2- must be fitted so that there is a gap -arrow- between the washer and the cover plate -3-.
- ◆ As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the top suspension arm and the wheel-bearing housing, which must be installed again when reinstalling.



- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ➔ Maintenance ; Booklet Octavia II .
- Carry out axle alignment ➔ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ➔ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)
- ◆ ➔ [“1.2 Tightening torque of the wheel screws”, page 301](#)

2.4 Removing and installing bottom suspension arm

➔ [“2.4.1 Removing and installing bottom suspension arm, vehicles with front-wheel drive”, page 223](#)

➔ [“2.4.2 Removing and installing bottom suspension arm, vehicles with four-wheel drive”, page 225](#)

2.4.1 Removing and installing bottom suspension arm, vehicles with front-wheel drive

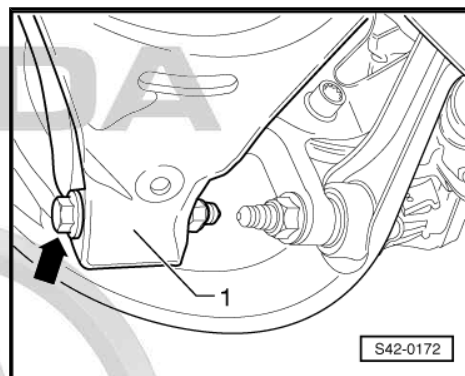
Removing

- Determine dimension “a”
➔ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove wheel.
- Unhook exhaust system at rear and lower.
- Remove coil spring
➔ [“4.4 Removing and installing spring”, page 242](#) .



- Release screw -arrow- for bottom suspension arm -1-.

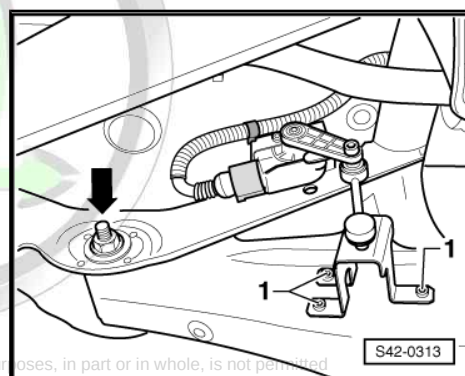
Vehicles with vehicle level sender



- Remove screw -1- from the holder for rear left vehicle level sensor - G76- .

Continued for all vehicles

- For example mark with a felt-tip pen the position of the eccentric bolt -arrow- to the assembly carrier.
- Unscrew screw -arrow-.
- Remove bottom suspension arm.



Installing

Installation is carried out in the reverse order. Pay attention to the following:

- Insert bottom suspension arm into the vehicle and tighten the screws by hand.



Note

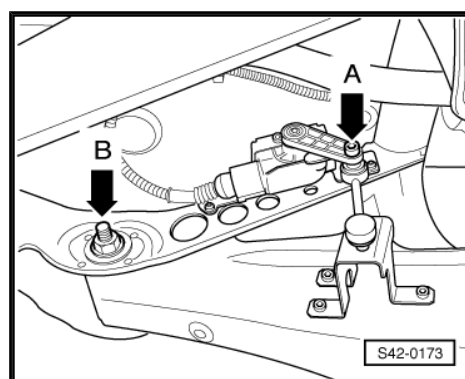
The bolted connection of the bottom suspension arm must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ *"3.5 Lift the wheel bearing in the unladen weight position", page 5.*

- Screw bottom suspension arm onto the assembly carrier and tighten the nuts to tightening torque.

Observe the marked marking of the eccentric bolt -arrow B- to the assembly carrier!

- Hook on exhaust system at rear.



- Tighten screw -arrow- for bottom suspension arm -1-.
- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ➔ Maintenance ; Booklet Octavia II .
- Carry out axle alignment ➔ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ➔ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ◆ ➔ [“1.2 Tightening torque of the wheel screws”, page 301](#)

2.4.2 Removing and installing bottom suspension arm, vehicles with four-wheel drive

Removing

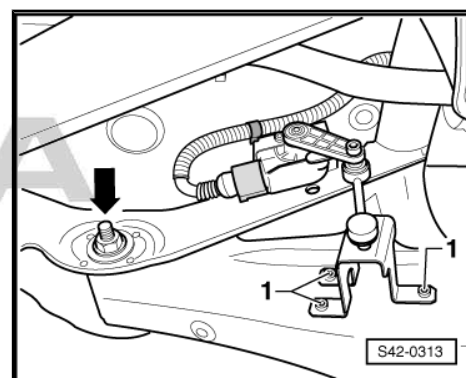
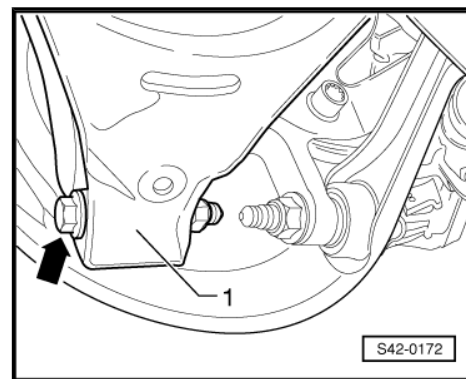
- Determine dimension “a”
➔ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove wheel.
- Unhook exhaust system at rear and lower.
- Remove coil spring
➔ [“4.4 Removing and installing spring”, page 242](#) .

Vehicles with vehicle level sender

- Remove screw -1- from the holder for rear left vehicle level sensor - G76- .

Continued for all vehicles

- For example mark with a felt-tip pen the position of the eccentric bolt -arrow- to the assembly carrier.





- Release screw -arrow- for bottom suspension arm -1-.
- Remove bottom suspension arm.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert bottom suspension arm into the vehicle and tighten the screws by hand.



Note

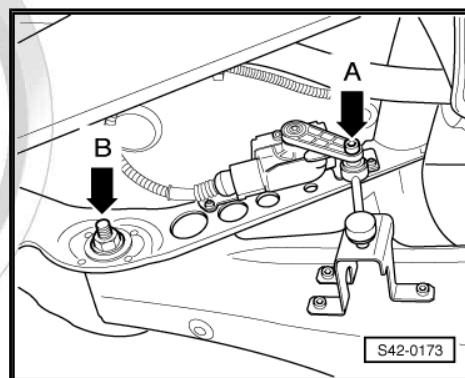
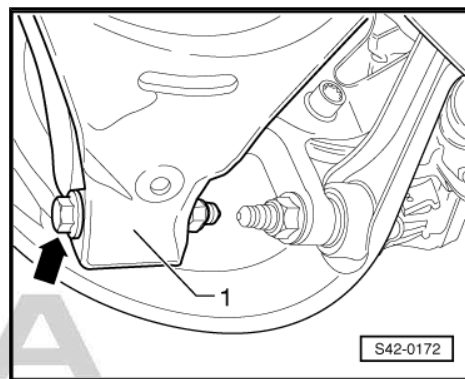
The bolted connection of the bottom suspension arm must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.

- Screw bottom suspension arm onto the assembly carrier and tighten the nuts to tightening torque.

Observe the marked marking of the eccentric bolt -arrow B- to the assembly carrier!

- Hook on exhaust system at rear.



- Tighten screw -arrow- for bottom suspension arm -1-.
- On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .
- Carry out axle alignment ⇒ "3.3 Axle alignment", page 309 .

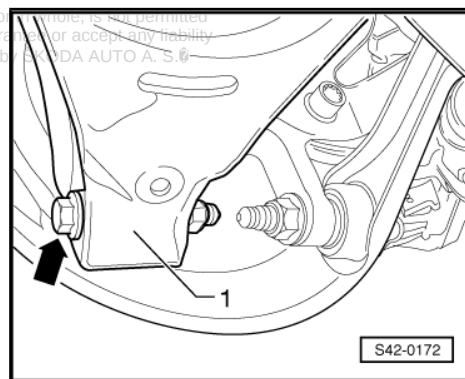
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ "2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202
- ♦ ⇒ "1.2 Tightening torque of the wheel screws", page 301



2.5 Removing and installing track rod for rear axle

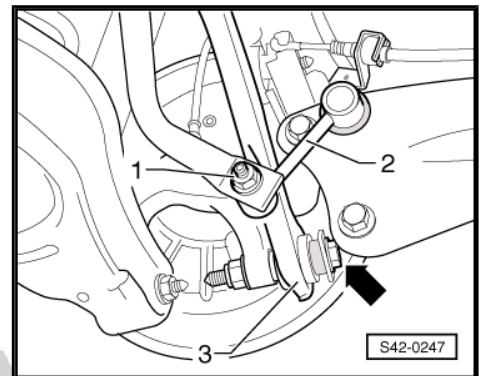
⇒ [“2.5.1 Removing and installing track rod for rear axle, vehicles with front-wheel drive”, page 227](#)

⇒ [“2.5.2 Removing and installing track rod for rear axle, vehicles with four-wheel drive”, page 228](#)

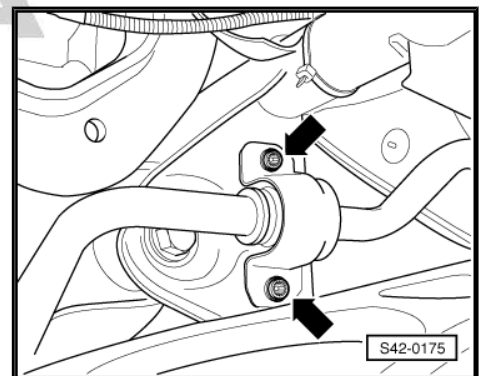
2.5.1 Removing and installing track rod for rear axle, vehicles with front-wheel drive

Removing

- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove wheel.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#) .
- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.
- Tighten screw -arrow- for track rod for rear axle -3-.



- Unscrew screws -arrows- for clamp of anti-roll bar.





- Unscrew nut -arrow- and remove screw towards the rear
- Remove track rod for rear axle.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert track rod for rear axle into the vehicle and tighten the screws by hand.



Note

- ♦ Pay attention to the different versions of track rods: opened towards the bottom or closed in direction of travel. Combined installation is allowed.
- ♦ The screwing of the track rod for rear axle and the clamps of the anti-roll bar must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!
 ⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5

- Carry out axle alignment ⇒ "3.3 Axle alignment", page 309 .

Tightening torques - summaries of components

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Note

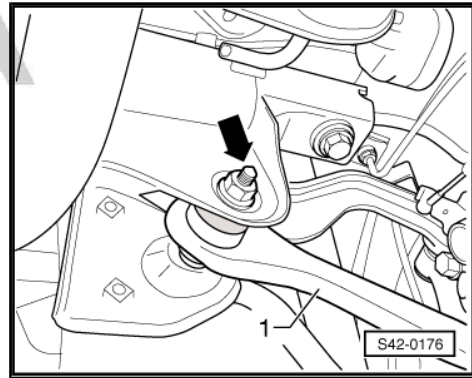
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ "2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive", page 198
- ♦ ⇒ "3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232
- ♦ ⇒ "1.2 Tightening torque of the wheel screws", page 301

2.5.2 Removing and installing track rod for rear axle, vehicles with four-wheel drive

Removing

- Determine dimension "a"
 ⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5 .
- Remove wheel.
- Remove coil spring
 ⇒ "4.4 Removing and installing spring", page 242 .



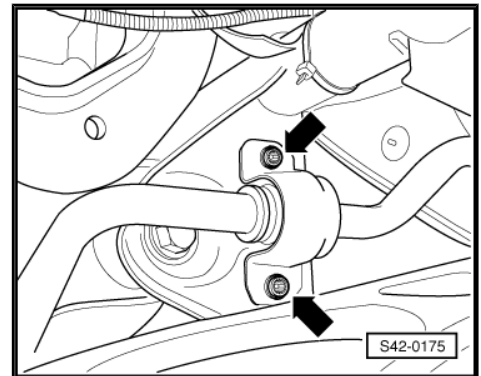
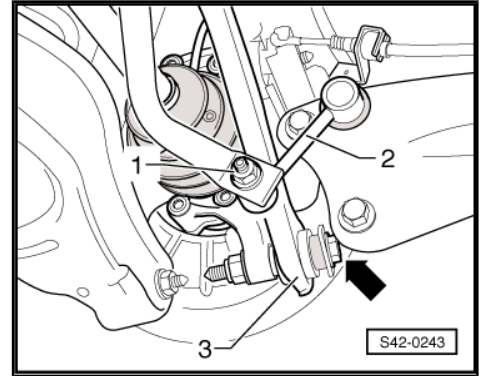
- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.
- Tighten screw -arrow- for track rod for rear axle -3-.



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the track rod for rear axle and the wheel-bearing housing, which must be installed again when re-installing.

- Unscrew screws -arrows- for clamp of anti-roll bar.



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- Unscrew nut -arrow- and remove screw towards the rear
- Remove track rod for rear axle.

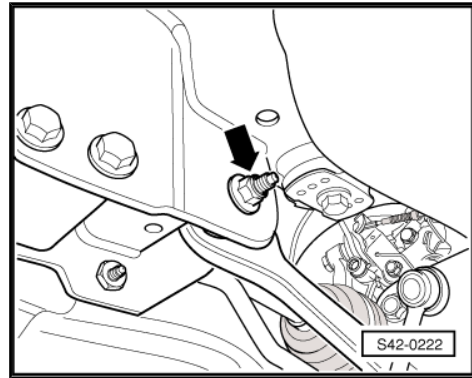
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ♦ As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the track rod for rear axle and the wheel-bearing housing, which must be installed again when reinstalling.
- ♦ Pay attention to the different versions of track rods: opened towards the bottom or closed in direction of travel. Combined installation is allowed.
- ♦ The screwing of the track rod for rear axle and the clamps of the anti-roll bar must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.
- Carry out axle alignment ⇒ "3.3 Axle alignment", page 309.



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

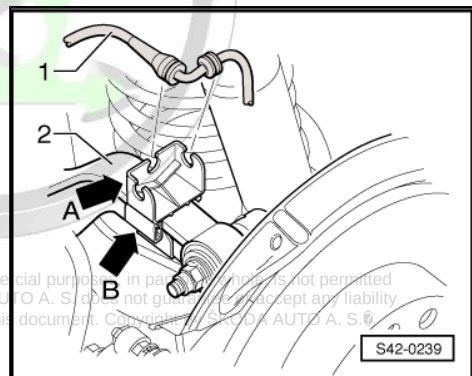
- ♦ ⇒ "2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202
- ♦ ⇒ "3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233
- ♦ ⇒ "1.2 Tightening torque of the wheel screws", page 301

2.6 Removing and installing bracket for the speed sensor cable

Removing

- Unclip speed sensor cable -1- from the holder.
- Unclip the top part of the holder -arrow A- from the tab -arrow B- and open the holder.
- Remove the holder from the top suspension arm -2-.

Installing



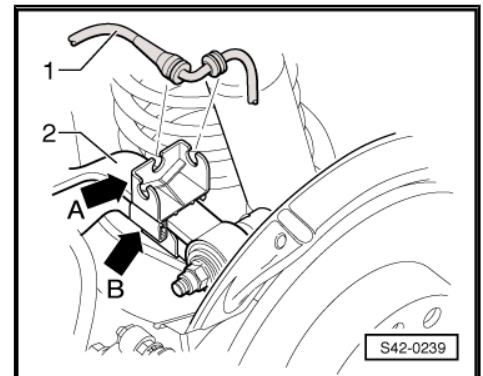
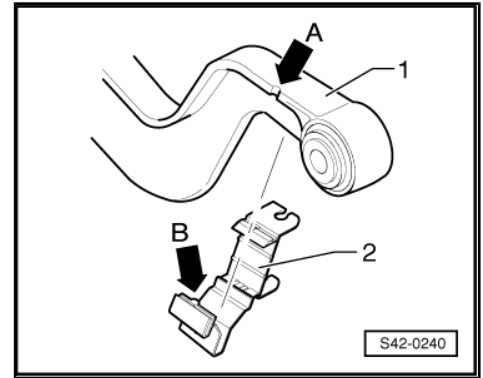
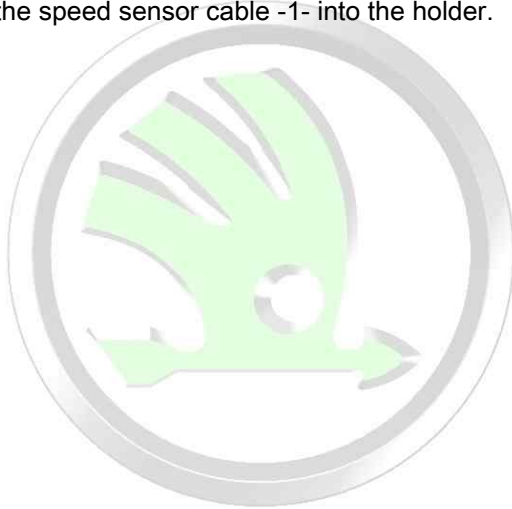
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- Push the opened holder -2- from below onto the top suspension arm -1-.

i Note

The surrounding components are not shown in the illustration for purposes of clear presentation.

- Insert the holder at the top suspension arm and position the holder in such a way, that the dent -arrow B- and the recess -arrow A- are flush.
- Close holder.
- Interlock the top part of the holder -arrow°A- with the tab -arrow°B-.
- Clip the speed sensor cable -1- into the holder.



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3 Anti-roll bar

⇒ [“3.1 Summary of components - anti-roll bar”, page 232](#)

⇒ [“3.2 Removing and installing the anti-roll bar”, page 234](#)

⇒ [“3.3 Removing and installing coupling rod”, page 236](#)

3.1 Summary of components - anti-roll bar

⇒ [“3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive”, page 232](#)

⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)

3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive

1 - Anti-roll bar

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ [“3.2.1 Removing and installing the anti-roll bar, vehicles with front wheel drive”, page 234](#)

2 - Rubber bearing

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ replace on both sides of the vehicle.

3 - Retaining clip

4 - Screw

- ☐ replace after each removal
- ☐ tighten in unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)
- ☐ tighten bolts alternatively and evenly
- ☐ 20 Nm + 90°

5 - Wheel bearing housing

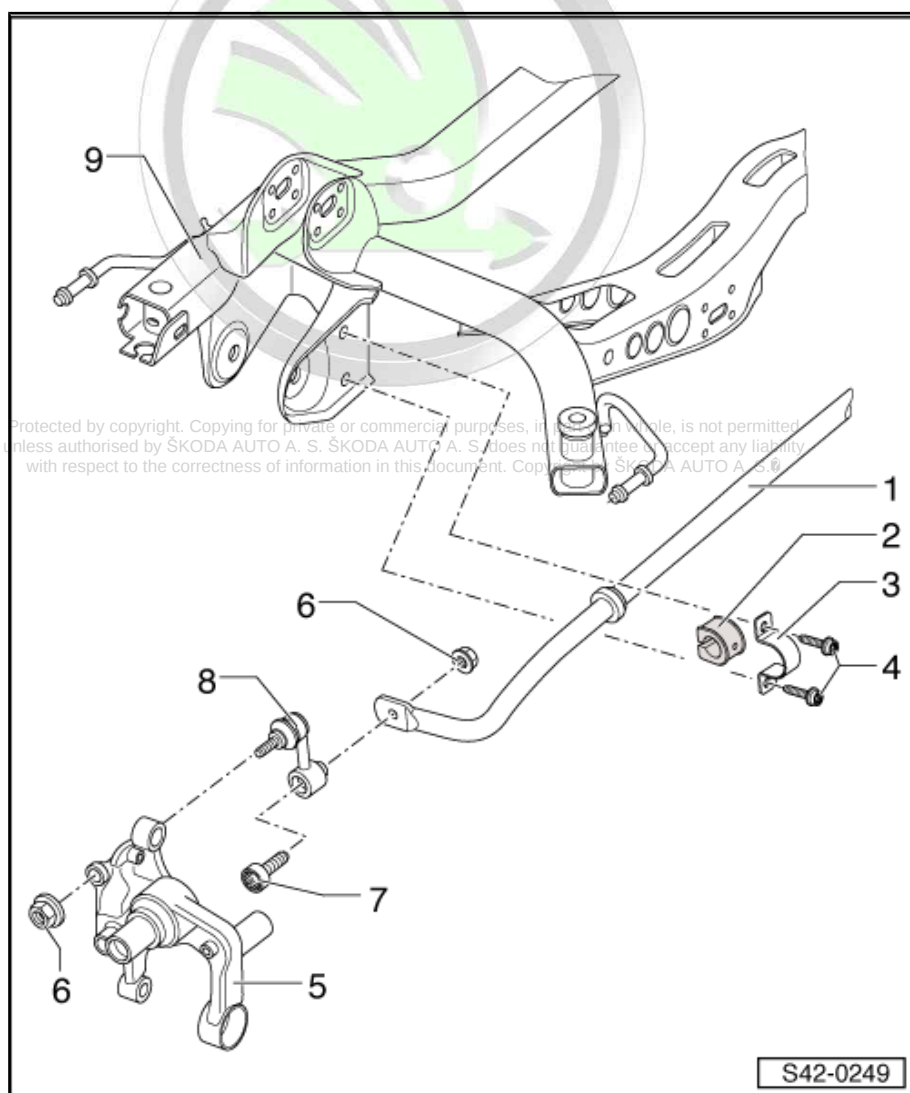
6 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 45 Nm

7 - Screw

8 - Coupling rod

- ☐ if damaged, replace on both sides of the axle
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing ⇒ [“3.3 Removing and installing coupling rod”, page 236](#)



S42-0249

9 - Assembly carrier

- ☐ Assignment ➔ Electronic Catalogue of Original Parts

3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive

The -arrow- shows the direction of travel.

1 - Anti-roll bar

- ☐ Assignment ➔ Electronic Catalogue of Original Parts
- ☐ Removing and installing ➔ ["3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive", page 235](#)

2 - Rubber bearing

- ☐ Assignment ➔ Electronic Catalogue of Original Parts
- ☐ replace on both sides of the vehicle.

3 - Retaining clip

4 - Screw

- ☐ replace after each removal
- ☐ tighten in unladen weight position ➔ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)
- ☐ tighten bolts alternatively and evenly
- ☐ 20 Nm + 90°

5 - Wheel bearing housing

- ☐ up to 05/2007 steel casting version
- ☐ as of 06/2007 aluminium version
- ☐ Assignment ➔ Electronic Catalogue of Original Parts

6 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 45 Nm

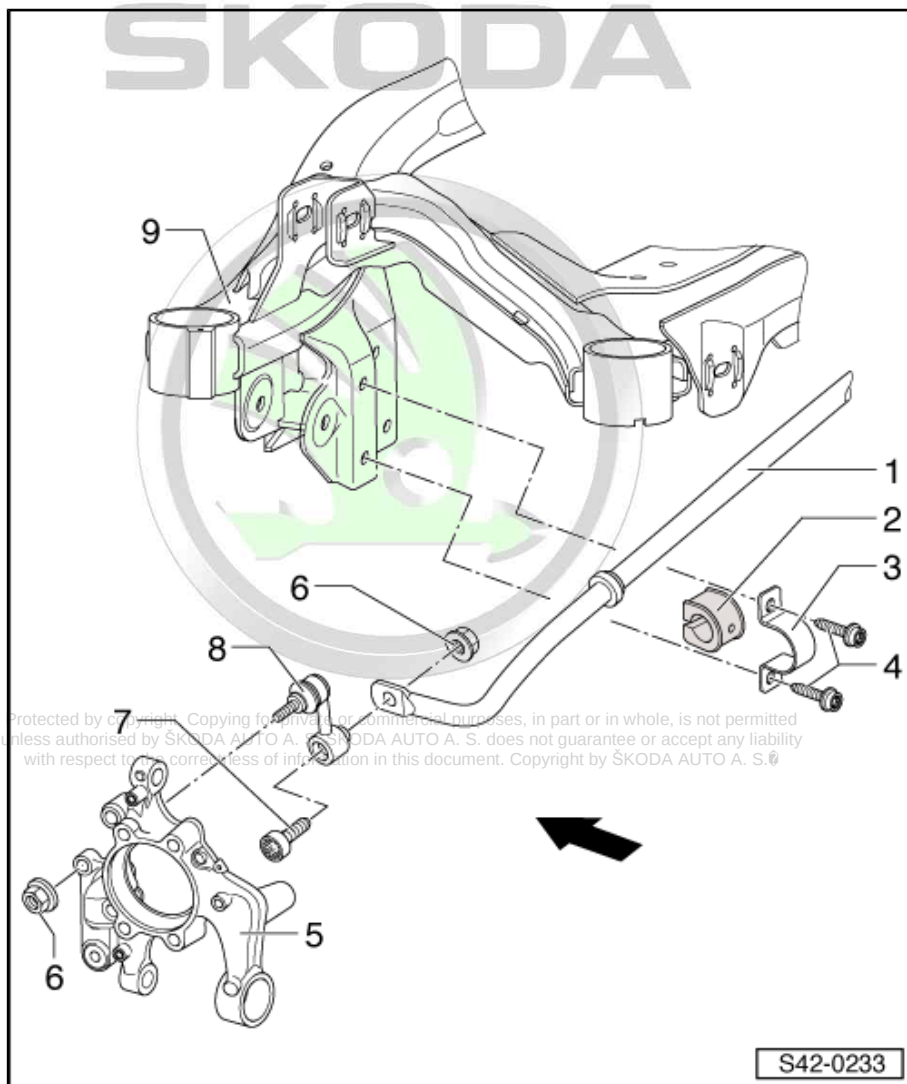
7 - Screw

8 - Coupling rod

- ☐ if damaged, replace on both sides of the axle
- ☐ Assignment ➔ Electronic Catalogue of Original Parts
- ☐ Removing and installing ➔ ["3.3 Removing and installing coupling rod", page 236](#)

9 - Assembly carrier

- ☐ Assignment ➔ Electronic Catalogue of Original Parts





3.2 Removing and installing the anti-roll bar

⇒ [“3.2.1 Removing and installing the anti-roll bar, vehicles with front wheel drive”, page 234](#)

⇒ [“3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive”, page 235](#)

3.2.1 Removing and installing the anti-roll bar, vehicles with front wheel drive

Removing

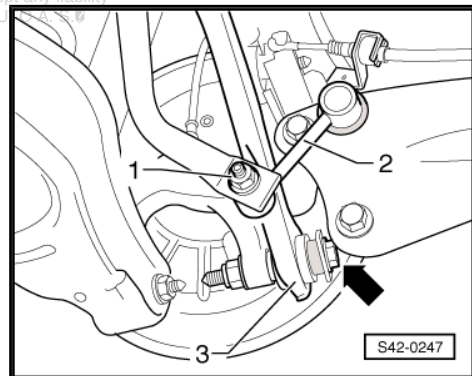
- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).
- Remove rear wheels.



Note

*The following steps are described for the left side of the vehicle.
The steps apply also for the right side of the vehicle.*

- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.



- Remove screws -arrows- for anti-roll bar.
- Remove anti-roll bar.

Installing

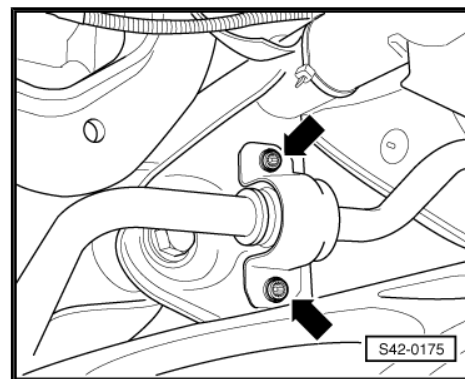
Installation is performed in the reverse order, pay attention to the following points:



Note

The bolted connection of the anti-roll bar and the assembly carrier must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)

3.2.2 Removing and installing the anti-roll bar, vehicles with all-wheel drive

Removing

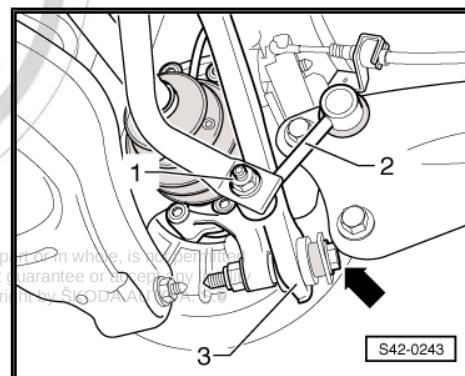
- Determine dimension "a"
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#).
- Remove rear wheels.



Note

The following steps are described for the left side of the vehicle. The steps apply also for the right side of the vehicle.

- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.



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- Remove screws -arrows- for anti-roll bar.
- Remove anti-roll bar.

Installing

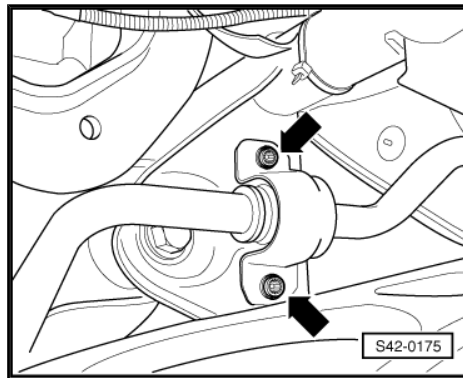
Installation is performed in the reverse order, pay attention to the following points:



Note

The bolted connection of the anti-roll bar to the assemble carrier must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is achieved before assembly (unladen weight position)!

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal. S. does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by ŠKODA AUTO A. S. ©

- ◆ ⇒ ["3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)

3.3 Removing and installing coupling rod

Special tools and workshop equipment required

- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS6931-

Removing

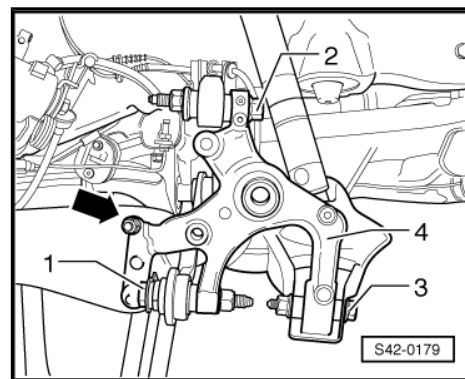
- Determine dimension "a"
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .
- Remove rear wheels.
- Position the engine/gearbox jack e.g. -V.A.G 1383A- with universal mount - V.A.G 1359/2- under the bottom suspension arm.
- Raise the suspension arm until the dimension "a" is reached
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .



Note

The following steps are described for the left side of the vehicle. These steps apply also for the right side of the vehicle.

- Unscrew the nut of the coupling rod -arrow-.



- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.
- Remove coupling rod.

Installing

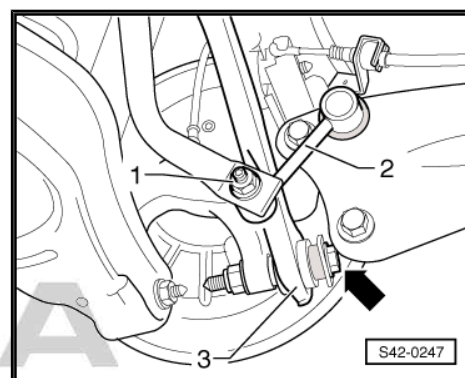
Installation is performed in the reverse order, pay attention to the following points:



Note

The bolted connection of the coupling rod must only be performed, if the measured dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ "3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232
- ◆ ⇒ "3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233
- ◆ ⇒ "3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233

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4 Suspension strut/shock absorber, spring

⇒ [“4.1 Summary of components - Suspension strut/shock absorber, spring”, page 238](#)

⇒ [“4.2 Removing and installing shock absorber”, page 241](#)

⇒ [“4.3 Repairing shock absorber”, page 241](#)

⇒ [“4.4 Removing and installing spring”, page 242](#)

⇒ [“4.5 Inspect shock absorber”, page 244](#)

⇒ [“4.6 Degas rear gas-filled shock absorber, and empty.”, page 245](#)

4.1 Summary of components - Suspension strut/shock absorber, spring

⇒ [“4.1.1 Summary of components - strut / shock absorber, spring, vehicles with front wheel drive”, page 238](#)

⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)

4.1.1 Summary of components - strut / shock absorber, spring, vehicles with front wheel drive

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1 - Top spring seat

2 - Coil spring

- ☐ Removing and installing
⇒ [“4.4 Removing and installing spring”, page 242](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

3 - Bottom spring seat

- ☐ Turn spring coil end up to the stop

4 - Screw

- ☐ tighten in unladen weight position
- ☐ 180 Nm

5 - Screw

- ☐ replace after each removal
- ☐ 50 Nm + 45°

6 - Shock absorber

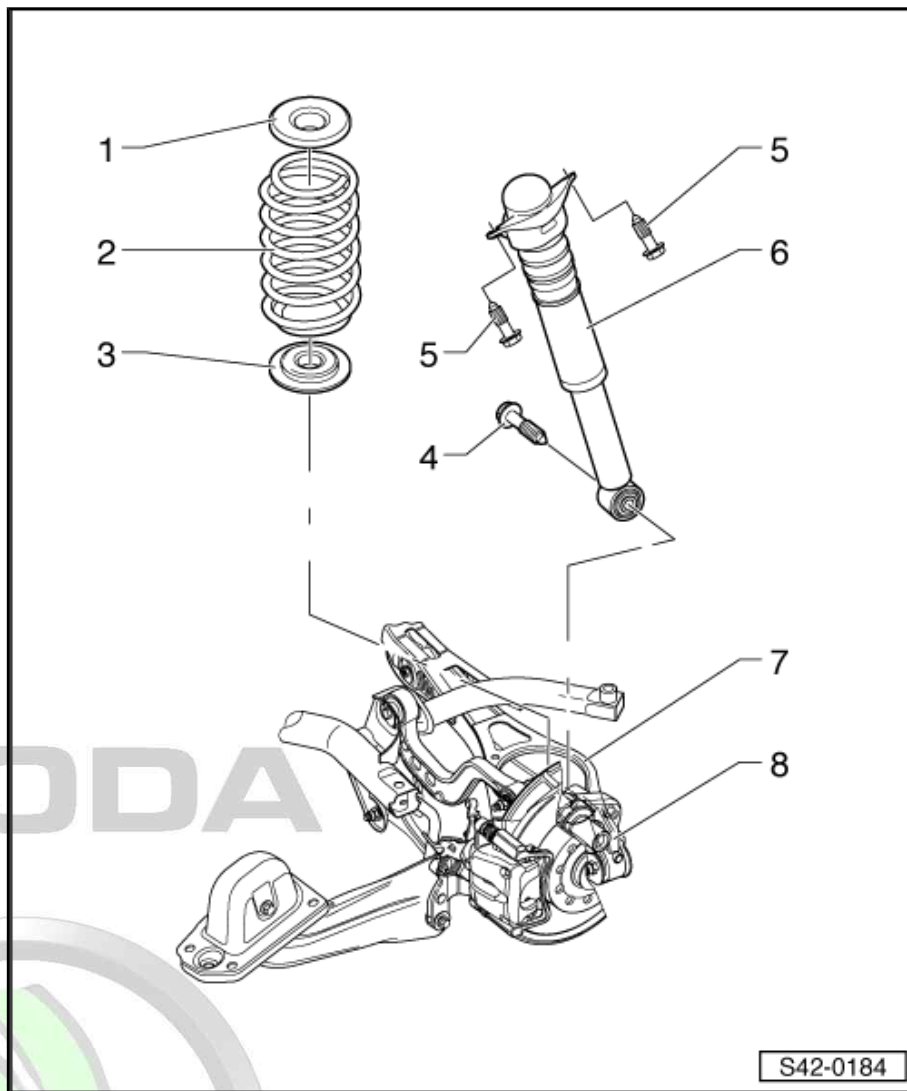
- ☐ Removing and installing
⇒ [“4.2 Removing and installing shock absorber”, page 241](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Check
⇒ [“4.5 Inspect shock absorber”, page 244](#)
- ☐ disposing of
⇒ [“4.6 Degas rear gas-filled shock absorber, and empty.”, page 245](#)

7 - Bottom suspension arm

- ☐ Removing and installing
⇒ [“2.4.1 Removing and installing bottom suspension arm, vehicles with front-wheel drive”, page 223](#)

8 - Wheel bearing housing

- ☐ Removing and installing
⇒ [“5.2.1 Removing and installing wheel bearing housing, vehicles with front-wheel drive”, page 251](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts



4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive

1 - Top spring seat

2 - Coil spring

- ❑ Removing and installing
⇒ ["4.4 Removing and installing spring", page 242](#)
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts

3 - Bottom spring seat

- ❑ Turn spring coil end up to the stop

4 - Screw

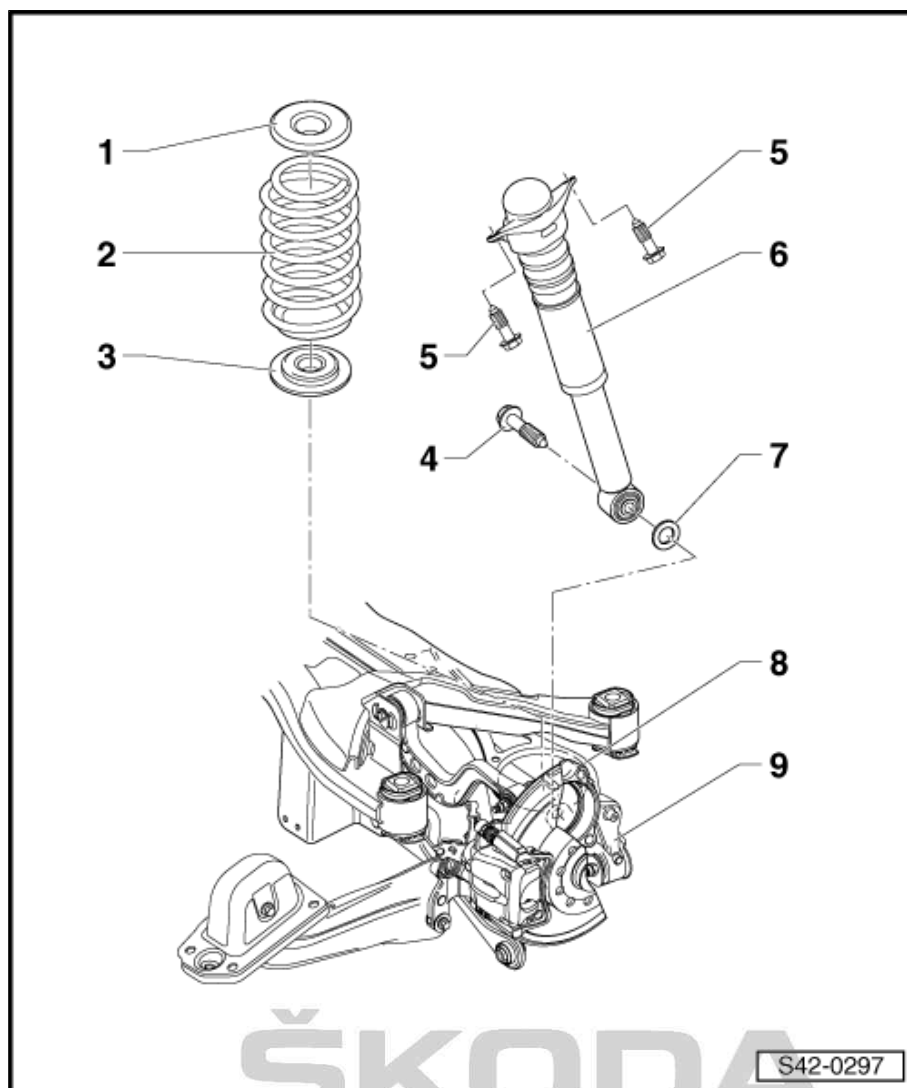
- ❑ tighten in unladen weight position
- ❑ 180 Nm

5 - Screw

- ❑ replace after each removal
- ❑ 50 Nm + 45°

6 - Shock absorber

- ❑ Removing and installing
⇒ ["4.2 Removing and installing shock absorber", page 241](#)
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Check
⇒ ["4.5 Inspect shock absorber", page 244](#)
- ❑ disposing of
⇒ ["4.6 Degas rear gas-filled shock absorber, and empty.", page 245](#)



7 - Washer

- ❑ as of 06/2007 only in combination with the aluminium wheel bearing housing
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts

8 - Bottom suspension arm

- ❑ Removing and installing
⇒ ["2.4.2 Removing and installing bottom suspension arm, vehicles with four-wheel drive", page 225](#)

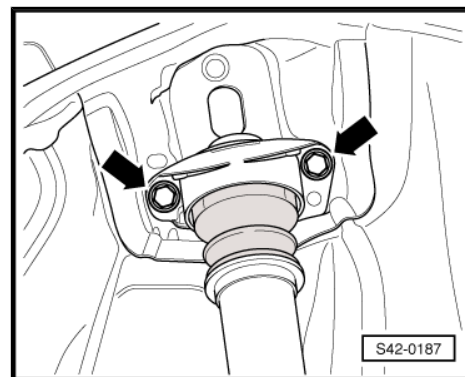
9 - Wheel bearing housing

- ❑ up to 05/2007 steel casting version
- ❑ as of 06/2007 aluminium version
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing
⇒ ["5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive", page 254](#)

4.2 Removing and installing shock absorber

Removing

- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).
- Remove wheel.
- Remove wheelhouse liner ⇒ Body Work; Rep. gr. 66.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#).
- Remove screws -arrows-.



- Unscrew screw -arrow-.
- Take out shock absorber.

Installing

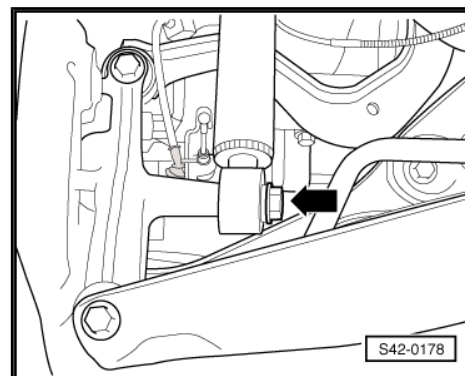
Installation is performed in the reverse order, pay attention to the following points:



Note

The bolted connection of the shock absorber to the wheel-bearing housing must only be performed, if the dimension “a” between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#)



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“4.1.1 Summary of components - strut / shock absorber, spring, vehicles with front wheel drive”, page 238](#)
- ◆ ⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

4.3 Repairing shock absorber

Special tools and workshop equipment required

- ◆ Shock absorber set - T10001-



1 - Shock absorber

- ☐ Removing and installing
⇒ ["4.2 Removing and installing shock absorber", page 241](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Check
⇒ ["4.5 Inspect shock absorber", page 244](#)
- ☐ disposing of
⇒ ["4.6 Degas rear gas-filled shock absorber, and empty.", page 245](#)

2 - Protective cap

3 - Protective tube

4 - Support ring

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

5 - Stop buffer

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

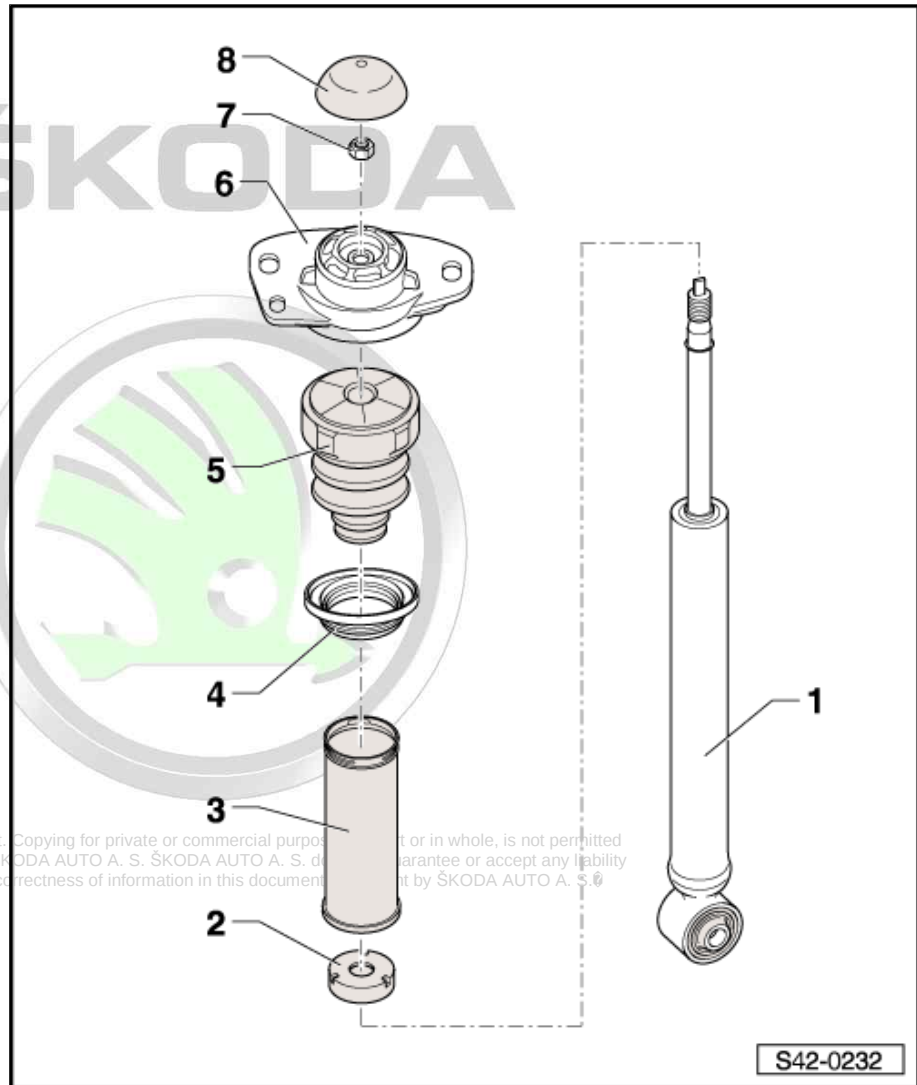
6 - Shock absorber bushing

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

7 - Nut

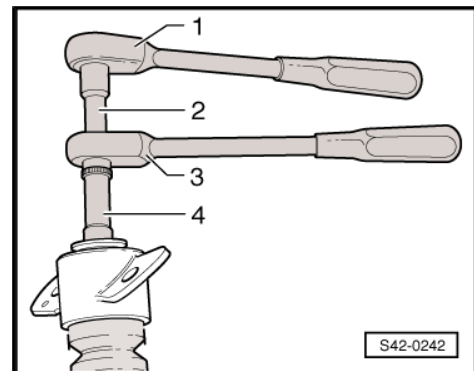
- ☐ replace after each removal
- ☐ slacken and tighten
⇒ [Fig. "Release the screw connection of the shock absorber bushing and tighten up again", page 242](#)
- ☐ 25 Nm

8 - Cover



Release the screw connection of the shock absorber bushing and tighten up again

- 1 - Ratchet (commercially available)
- 2 - Tool - T10001/9-
- 3 - Ratchet - T10001/11-
- 4 - Tool - T10001/1-



4.4 Removing and installing spring

Special tools and workshop equipment required

- ◆ Tensioning device for the suspension struts , e.g. -V.A.G 1752-

- ◆ Spring holder , e.g. -V.A.G 1752/3A-
- ◆ Adapter , e.g. -V.A.G 1752/9 -

Removing

- Remove wheel.
- Insert spring tensioning device , e.g. -V.A.G 1752/1- -3-.



WARNING

Pay attention to the correct seating of the helical spring in the spring tensioner , e.g. -V.A.G 1752/3A- (risk of accident).

- Tension helical spring sufficiently until it can be taken out.
 - Remove coil spring.
- 1 - Adapter , e.g. -V.A.G 1752/9-
 - 2 - Spring holder , e.g. -V.A.G 1752/3A-
 - 3 - Spring tensioning device , e.g. -V.A.G 1752/1-

Installing

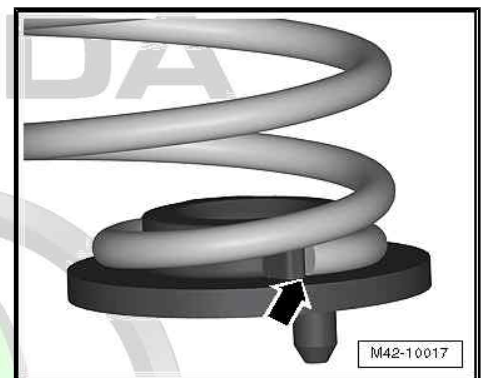
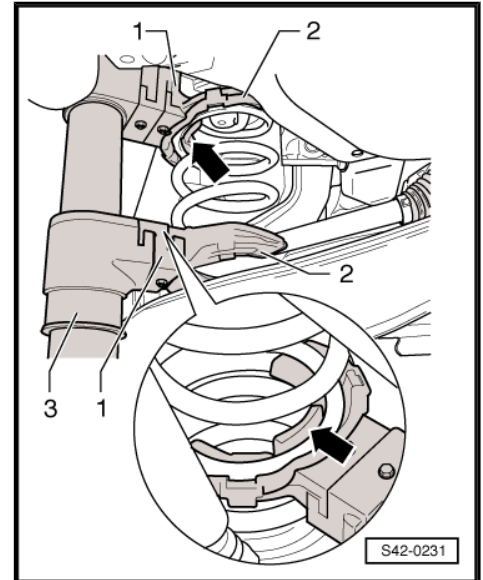
Installation is performed in the reverse order, pay attention to the following points:



Note

The beginning of the spring -arrow- must be positioned at the stop of the bottom spring seat.

- Install the helical spring along with the spring seat.





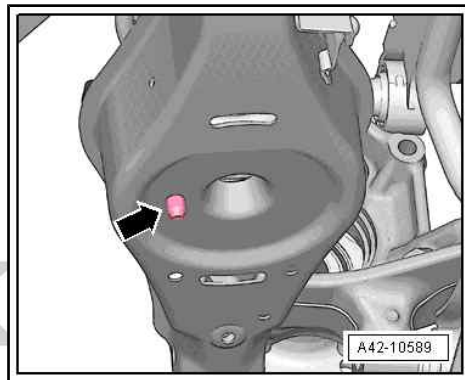
- Insert the stud of the spring seat into the hole of the bottom suspension arm -arrow-.



Note

In the fig. the bottom suspension arm is illustrated without protection against stones.

- Insert top spring seat into the upper spring coil end.
- Slacken spring. While doing so, the top spring seat must be positioned onto the lug of the body.
- Remove spring tensioning device.
- Installing and tightening the wheel.



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

4.5 Inspect shock absorber

⇒ [“4.5.1 Inspecting the removed shock absorber without gas pressure”, page 244](#)

⇒ [“4.5.2 Inspecting the removed shock absorber with gas pressure”, page 244](#)

4.5.1 Inspecting the removed shock absorber without gas pressure

Defective shock absorbers become noticeable while driving because of the knocking noises caused by wheel hopping, more specifically on poor road surfaces and they must be replaced. The failure is mainly caused by the loss of oil. The shock absorber then compresses and/or expands in jolts. It exhibits “idle”, before it begins to operate.



Note

The shock absorbers are maintenance-free. It is not possible to top up the shock absorber oil.

4.5.2 Inspecting the removed shock absorber with gas pressure

Damaged shock absorbers with gas pressure become noticeable because of a loud banging sound, caused by wheel hopping, and also because a strong oil leak occurs.

Manual testing, as described below, can determine if the shock absorber is damaged or not:

- Compress the shock absorber by hand.
- The piston rod must move evenly over the entire stroke without jolting.

- Release the piston rod. On sufficiently pressurized shock absorbers it will automatically return to its original position.

If this is not the case, the shock absorber need not necessarily be replaced, as it will still operate as a conventional shock absorber (see instructions below).

i Note

- ♦ *The absorbing function is still fully present without sufficient gas pressure as long as the oil leakage is not too large. However, the noise level may increase. On older vehicles it is possible to continue using an operational yet pressureless shock absorber without problem.*
- ♦ *Adequate gas pressure in the shock absorber improves the noise behaviour and function when driving over poor road surfaces.*

4.6 Degas rear gas-filled shock absorber, and empty.

- Clamp the gas-filled shock absorber vertically in the vice.



Caution

Wear safety goggles during the drilling procedure.

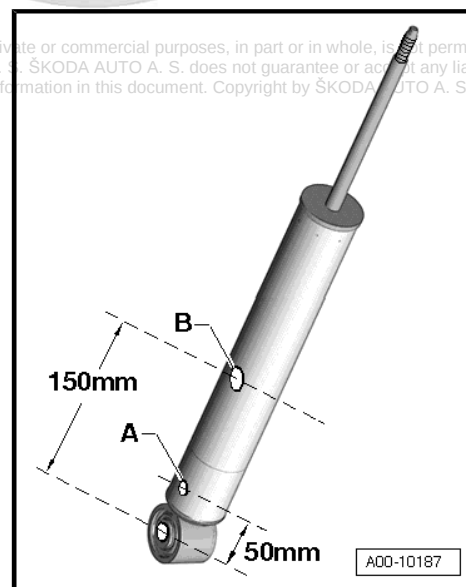
- Drill a hole Ø 3 mm -A- through the outer pipe of the shock absorber.



Note

Gas will escape during drilling.

- Drill further until the inner pipe has also been drilled through (approx. 25 mm deep).
- Drill a second hole Ø 6 mm -B- through the outer and inner shock absorber pipes.
- Hold the shock absorber over an oil catching pan. Move the piston rod several times up and down over its entire stroke until no more oil escapes.





5 Wheel bearing, trailing arm

⇒ "5.1 Summary of components - wheel bearing housing, trailing arm", page 246

⇒ "5.2 Removing and installing wheel bearing housing", page 251

⇒ "5.3 Removing and installing wheel-bearing unit", page 258

⇒ "5.4 Replacing the rubber-metal bearing for wheel-bearing housing", page 263

⇒ "5.5 Removing and installing trailing arm with bracket", page 267

⇒ "5.6 Repairing trailing arm", page 271

5.1 Summary of components - wheel bearing housing, trailing arm

⇒ "5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive", page 246

⇒ "5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive", page 249

5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive

The -arrow- shows the direction of travel.



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1 - Screw

- ☐ replace after each removal
- ☐ 50 Nm + 45°

2 - Bearing bracket

3 - Screw

- ☐ replace after each removal
- ☐ determine ⇒ [page 252](#)
the fitting position of the bracket to the trailing arm before tightening the screw
- ☐ 90 Nm + 90°

4 - Coupling rod

- ☐ connects anti-roll bar with trailing arm/wheel-bearing housing

5 - Screw

- ☐ Observe tightening sequence ⇒ [page 252](#)
- ☐ replace after each removal
- ☐ determine ⇒ [page 252](#)
the fitting position of the trailing arm to the wheel-bearing housing before tightening the screws
- ☐ 70 Nm + 90°

6 - Trailing arm

- ☐ Removing and installing
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#)
- ☐ repairing ⇒ ["5.6 Repairing trailing arm", page 271](#)

7 - Screw

- ☐ 8 Nm

8 - Rear right wheel speed sensor - G44- / Rear left wheel speed sensor - G46-

- ☐ can be checked ⇒ Vehicle diagnostic tester in the guided fault detection system
- ☐ Clean the inner surface of the hole before inserting the sensor and coat with a solid lubricant paste - G 000 650- .

9 - Wheel bearing housing

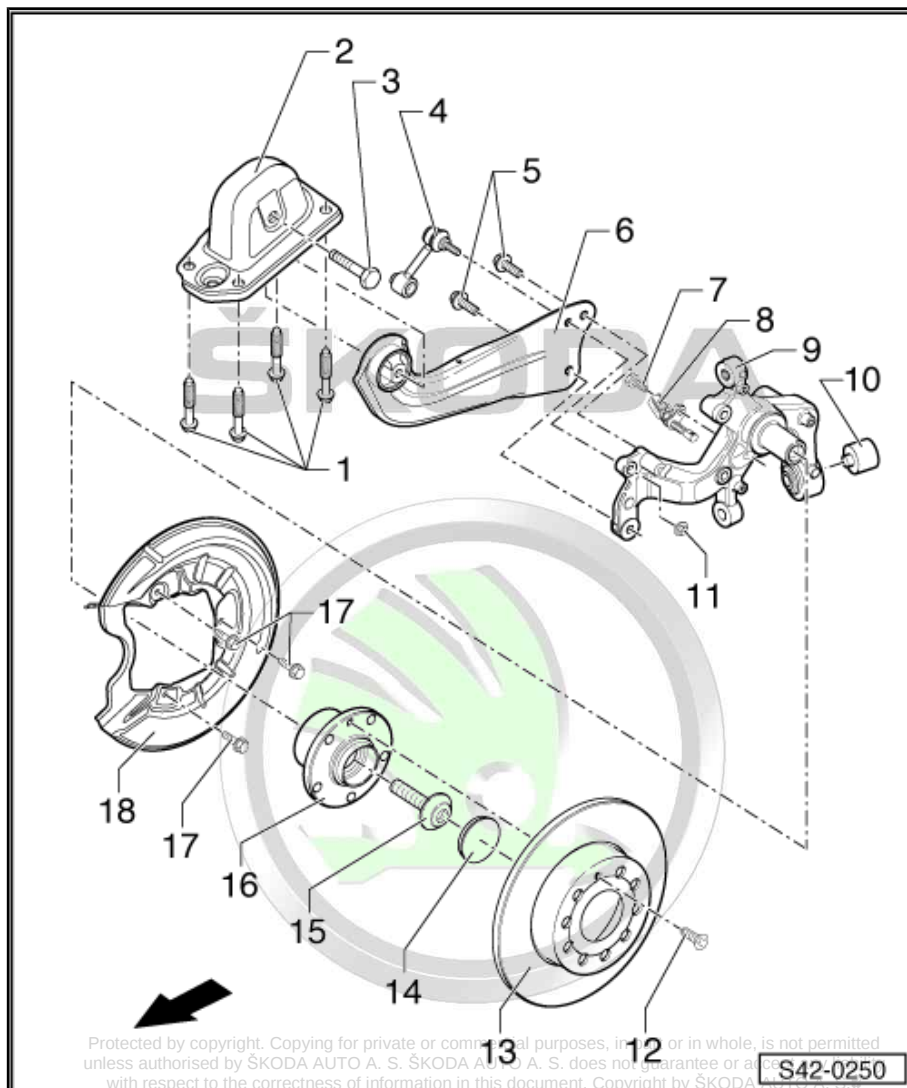
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Removing and installing
⇒ ["5.2.1 Removing and installing wheel bearing housing, vehicles with front-wheel drive", page 251](#)

10 - Rubber-metal bearing

- ☐ Replace
⇒ ["5.4.1 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with front-wheel drive", page 263](#)

11 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232](#)





12 - Screw

- ☐ 8 Nm

13 - Brake disc

14 - Cap

- ☐ replace after each removal
- ☐ extracting and inserting
⇒ ["5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive", page 258](#)

a professional seal can only be achieved with a new cap

15 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ 200 Nm + 90°

16 - Wheel hub with wheel bearing

- ☐ Sensor ring for ABS is built into the wheel hub
- ☐ Removing and installing
⇒ ["5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive", page 258](#)

Wheel hub and wheel bearing form one unit. It is clearance free, adjusting and repairs are not possible.

17 - Screw

- ☐ 12 Nm

18 - Protection plate

5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive

The -arrow- shows the direction of travel.

1 - Screw

- ☐ replace after each removal
- ☐ 50 Nm + 45°

2 - Bearing bracket

3 - Screw

- ☐ replace after each removal
- ☐ determine
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#) the fitting position of the bracket to the trailing arm before tightening the screw
- ☐ 90 Nm + 90°

4 - Coupling rod

- ☐ connects anti-roll bar with trailing arm/wheel-bearing housing

5 - Screw

- ☐ Observe tightening sequence
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#)
- ☐ replace after each removal
- ☐ note
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#) the fitting position of the trailing arm to the wheel-bearing housing before tightening the screws
- ☐ 70 Nm + 90°

6 - Trailing arm

- ☐ Removing and installing ⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#)
- ☐ repairing ⇒ ["5.6 Repairing trailing arm", page 271](#)

7 - Drive shaft

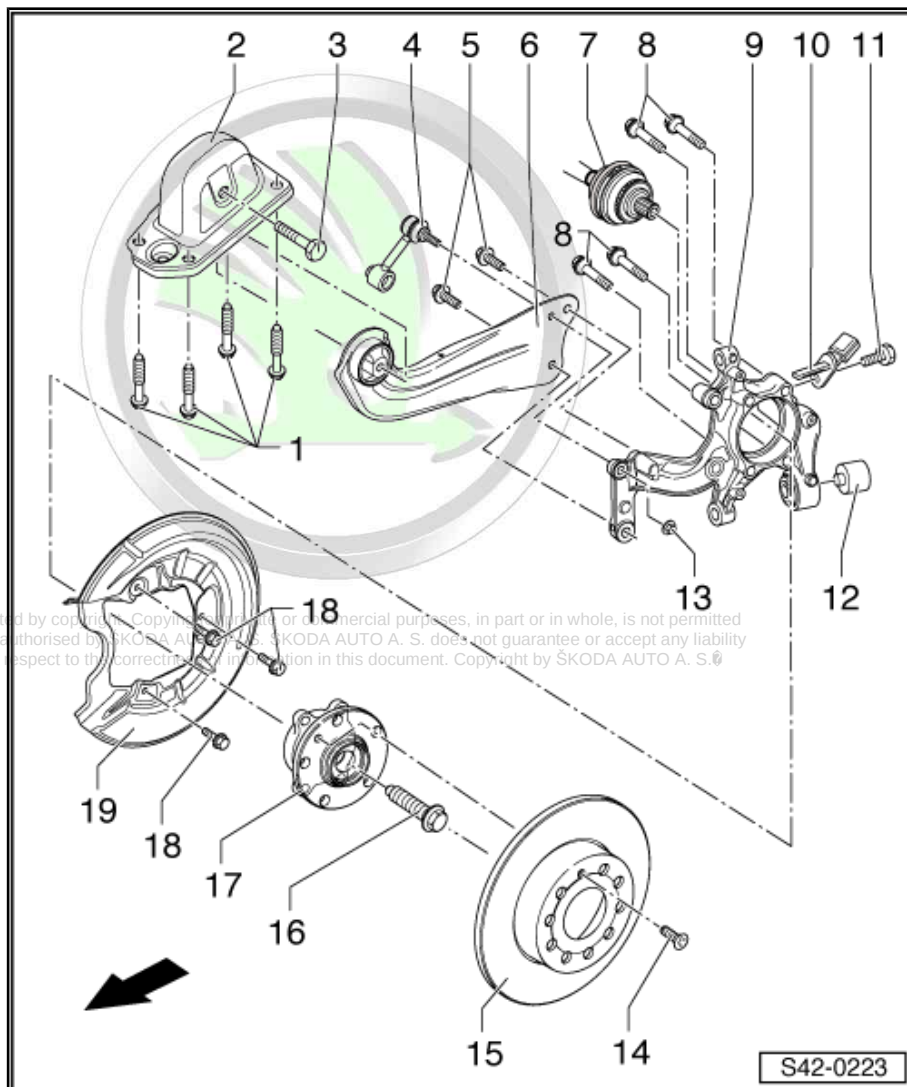
- ☐ Summary of components ⇒ ["6 Drive shaft", page 273](#)
- ☐ Removing and installing ⇒ ["6.3.1 Removing and installing cardan shaft", page 279](#)

8 - Screw

- ☐ replace after each removal
- ☐ 90 Nm + 90°

9 - Wheel bearing housing

- ☐ up to 05/2007 steel casting version
- ☐ as of 06/2007 aluminium version
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts





- ☐ Removing and installing
⇒ [“5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive”, page 254](#)

10 - Rear right wheel speed sensor - G44- / Rear left wheel speed sensor - G46-

- ☐ can be checked ⇒ Vehicle diagnostic tester in the guided fault detection system
- ☐ Clean the inner surface of the hole before inserting the sensor and coat with a solid lubricant paste - G 000 650- .

11 - Screw

- ☐ 8 Nm

12 - Rubber-metal bearing

- ☐ Replace
⇒ [“5.4.2 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with four-wheel drive”, page 265](#)

13 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ Tightening torque
⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)

14 - Screw

- ☐ 8 Nm

15 - Brake disc

16 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Tightening torque ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)
- ☐ Removing and installing ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)

17 - Wheel hub with wheel bearing

- ☐ Sensor ring for ABS is built into the wheel hub
- ☐ Removing and installing
⇒ [“5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive”, page 261](#)

Wheel hub and wheel bearing form one unit. It is clearance free, adjusting and repairs are not possible.

18 - Screw

- ☐ up to 05/2007 wheel bearing housing in steel casting and 3 screws
- ☐ as of 06/2007 aluminium wheel bearing housing and 4 screws
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ 12 Nm

19 - Protection plate

- ☐ up to 05/2007 for wheel bearing housing in steel casting with 3 holes
- ☐ as of 06/2007 for aluminium wheel bearing housing with 4 holes
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

5.2 Removing and installing wheel bearing housing

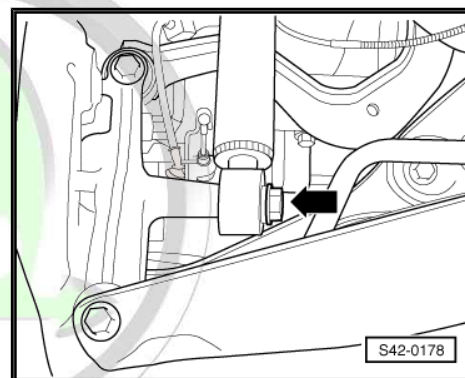
⇒ [“5.2.1 Removing and installing wheel bearing housing, vehicles with front-wheel drive”, page 251](#)

⇒ [“5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive”, page 254](#)

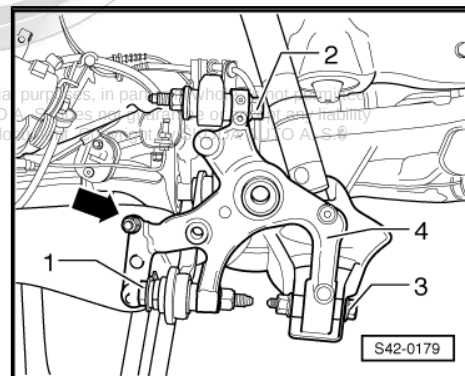
5.2.1 Removing and installing wheel bearing housing, vehicles with front-wheel drive

Removing

- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).
- Remove wheel.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#).
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g. hang on the structure in such a way that the weight of the brake caliper does not burden or damage the brake hose ⇒ braking systems; Rep. gr. 46.
- Remove brake disc.
- Removing the wheel hub with wheel bearing
⇒ [“5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive”, page 258](#).
- Remove cover plate.
- Remove the ABS-speed sensor from the wheel bearing housing ⇒ Braking systems; Rep. gr. 45.
- Unscrew screw for shock absorber mounting -arrow-.



- Unscrew the nut of the coupling rod -arrow-.
- Unscrew screw for track rod for rear axle -1-, top suspension arm -2- and bottom suspension arm -3- from wheel-bearing housing -4-.



- Hold the wheel-bearing housing and unscrew screws -arrows-.
- Take the wheel-bearing housing out of the coupling rod joint thread -1-.
- Remove the wheel bearing housing.

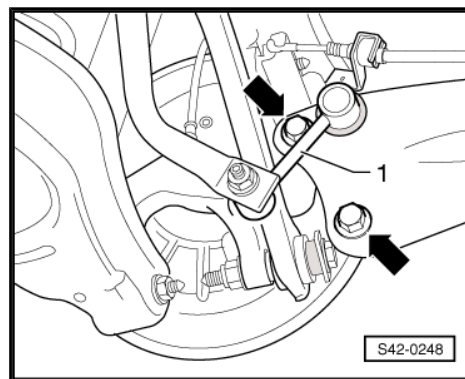
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Pay attention to correct installation position of trailing arm and wheel-bearing housing.



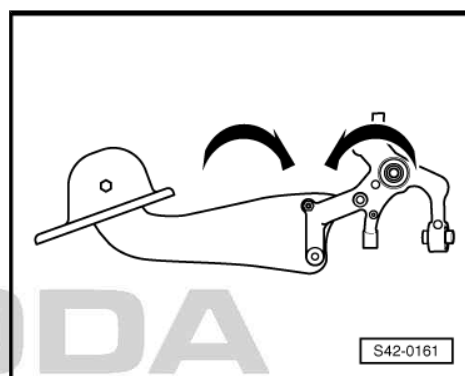
Installation position of trailing arm and wheel-bearing housing.

The screwed connection of the trailing arm/wheel-bearing housing must only be tightened if all other components (spring and shock absorber are required) of the wheel suspension in question are already fitted. For tightening, the wheel-bearing housing must be in the unladen weight position
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5. Only move the trailing arm and the wheel-bearing housing into the necessary position for tightening the screwed connection -arrows- under these conditions.

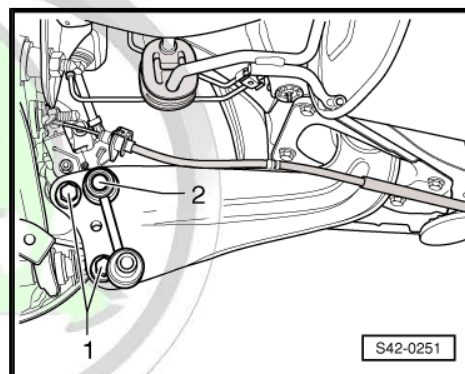


Note

Note the following work steps and absolutely ensure that you follow the sequence!



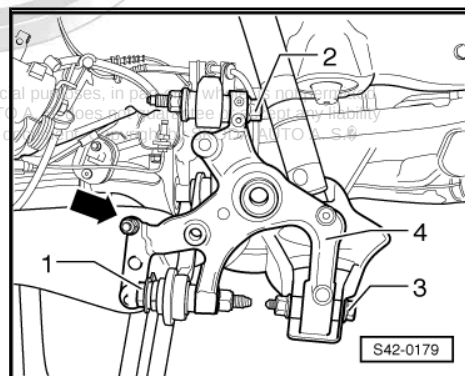
- Screw wheel-bearing housing with screws -1- onto trailing arm and coupling rod -2-, but do not tighten the screws and the nut yet!



- Screw the track rod for rear axle -1-, top suspension arm -2- and bottom suspension arm -3- to the wheel-bearing housing -4- but do not tighten yet!

- Install cover plate.

- Installing the wheel bearing/wheel hub with wheel bearing
⇒ "5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive", page 258.



- Screw in screw for shock absorber mounting -arrow-, but do not tighten yet!
- Install coil spring
⇒ ["4.4 Removing and installing spring", page 242](#) .

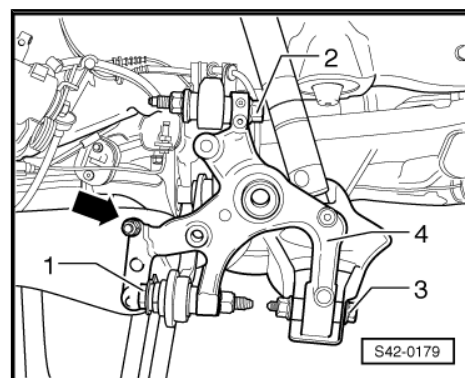
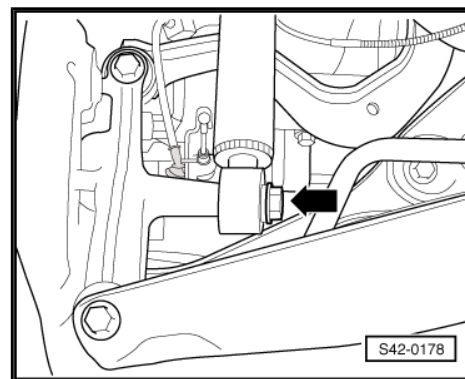


Note

The tightening of the track control arm and shock absorber to the wheel-bearing housing must only be performed, if the dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .

- Adjust dimension -a-
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .
- Tighten screw for track rod for rear axle -1-.
- Tighten screw for bottom suspension arm -3-.



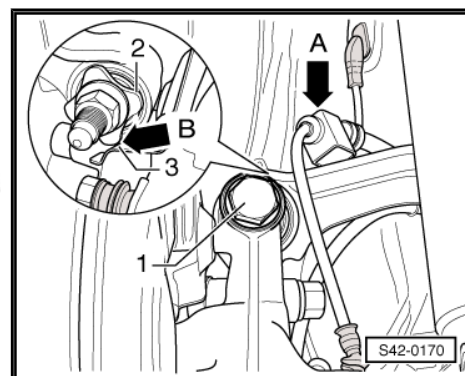
- Tighten screw -1- for top suspension arm.



Note

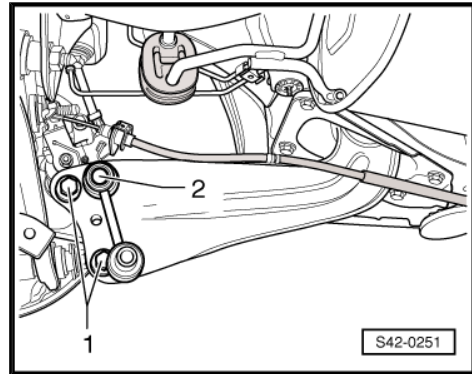
The washer -2- must be fitted so that there is -arrow B- a gap between the washer and the cover plate -3-

- Tighten screw for shock absorber mounting.





- Tighten screws -1- of trailing arm with tightening torque, while doing so pay attention to the required position of the trailing arm and wheel-bearing housing ⇒ [page 252](#) .
- Tighten nut of coupling rod -2- to wheel-bearing housing.
- Remove tools for adjusting the dimension -a-.
- Install the ABS-speed sensor in the wheel-bearing housing.
- Install brake disc.
- Install brake caliper with brake carrier ⇒ Brake systems; Rep. gr. 46 .
- Carry out axle alignment ⇒ ["3.3 Axle alignment", page 309](#) .



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive", page 246](#)
- ◆ ⇒ ["4.1.1 Summary of components - strut / shock absorber, spring, vehicles with front wheel drive", page 238](#)
- ◆ ⇒ ["3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive", page 232](#)
- ◆ ⇒ ["2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive", page 198](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46

5.2.2 Removing and installing the wheel bearing housing, vehicles with four-wheel drive

Removing

- Determine dimension "a"
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .
- Release drive shaft screw connection
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 288](#) ,

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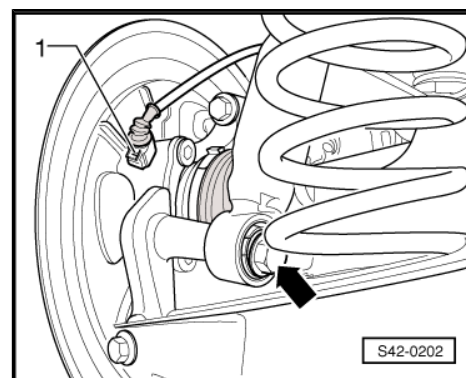
Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove coil spring
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g. hang on the structure in such a way that the weight of the brake caliper does not burden or damage the brake hose ⇒ braking systems; Rep. gr. 46 .
- Remove brake disc.
- Remove cover plate.
- Removing the wheel hub with wheel bearing
⇒ ["5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive", page 261](#) .
- Remove the ABS-speed sensor from the wheel bearing housing ⇒ Braking systems; Rep. gr. 45 .
- Unscrew screw for shock absorber mounting -arrow-.



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the shock absorber and the wheel-bearing housing, which must be installed again when reinstalling.





- Unscrew the nut of the coupling rod -arrow-.



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the top suspension arm/track rod for rear axle and the wheel-bearing housing, which must be installed again when reinstalling.

- Unscrew screw for track rod for rear axle -1-, top suspension arm -2- and bottom suspension arm -3- from wheel-bearing housing -4-.
- Hold the wheel-bearing housing and unscrew screws -arrows-.
- Take the wheel-bearing housing out of the coupling rod joint thread -1-.
- Remove the wheel bearing housing.

Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Pay attention to correct installation position of trailing arm and wheel-bearing housing.

Installation position of trailing arm and wheel-bearing housing.

The screwed connection of the trailing arm/wheel-bearing housing must only be tightened if all other components (spring and shock absorber are required) of the wheel suspension in question are already fitted. For tightening, the wheel-bearing housing must be in the unladen weight position
⇒ **“3.5 Lift the wheel bearing in the unladen weight position”, page 5**. Only move the trailing arm and the wheel-bearing housing into the necessary position for tightening the screwed connection -arrows- under these conditions.

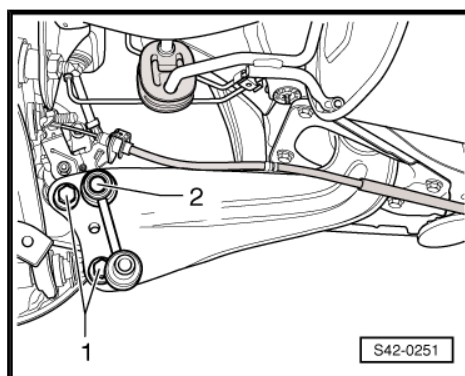
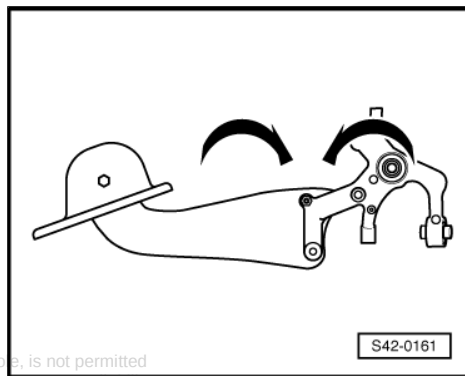
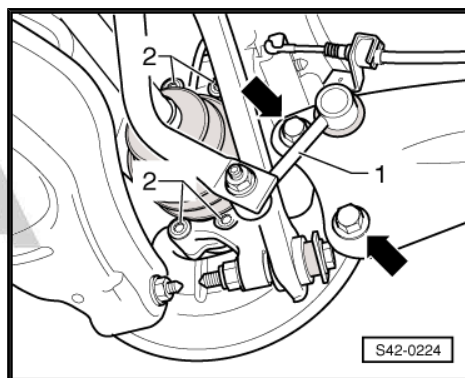
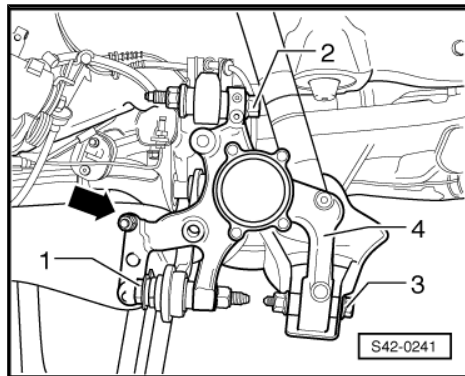


Note

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Note the following work steps and absolutely ensure that you follow the sequence!

- Screw wheel-bearing housing with screws -1- onto trailing arm and coupling rod -2-, but do not tighten the screws and the nut yet!



- Screw the track rod for rear axle -1-, top suspension arm -2- and bottom suspension arm -3- to the wheel-bearing housing -4- but do not tighten yet!



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the top suspension arm/track rod for rear axle and the wheel-bearing housing, which must be installed again when reinstalling.

- Installing the wheel hub with wheel bearing
⇒ ["5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive", page 261](#) .
- Install cover plate.
- Screw in screw for shock absorber mounting -arrow-, but do not tighten yet!



Note

As of 06/2007 new aluminium wheel bearing housings are fitted. A washer is located between the shock absorber and the wheel-bearing housing, which must be installed again when reinstalling.

- Installing the helical spring
⇒ ["4.4 Removing and installing spring", page 242](#)

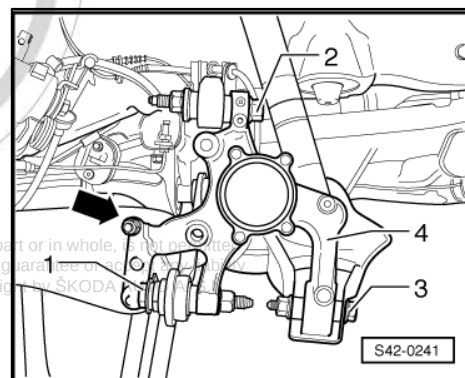
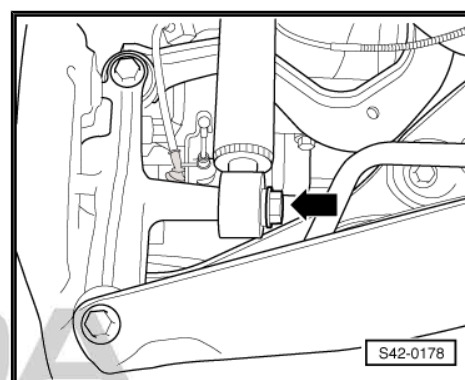
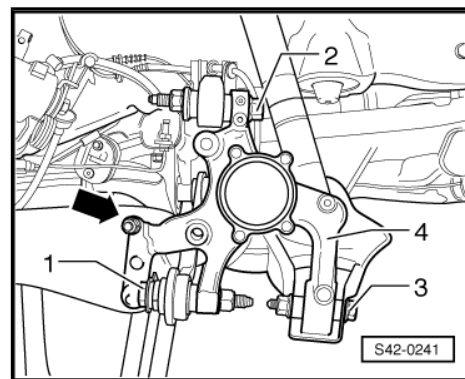


Note

The tightening of the track control arm and shock absorber to the wheel-bearing housing must only be performed, if the dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)

- Adjust dimension -a-
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .
- Tighten screw for track rod for rear axle -1-.
- Tighten screw for bottom suspension arm -3-.



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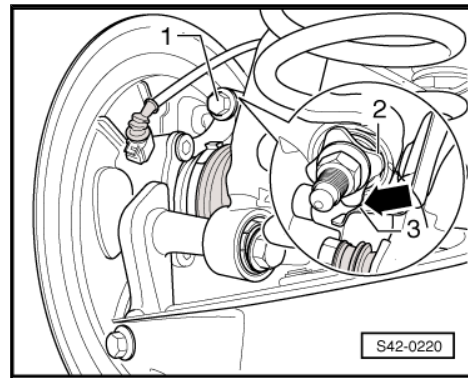
- Tighten screw -1- for top suspension arm.



Note

The washer -2- must be fitted so that there is a gap -arrow- between the washer and the cover plate -3-.

- Tighten screw for shock absorber mounting.
- Remove tools for adjusting the dimension -a-.
- Install the ABS-speed sensor in the wheel-bearing housing.
- Install brake disc.
- Install brake caliper with brake carrier ⇒ Brake systems; Rep. gr. 46 .
- Tighten screws -1- of trailing arm with tightening torque, while doing so pay attention to the required position of the trailing arm and wheel-bearing housing ⇒ [page 256](#)
- Tighten nut of coupling rod -2- to wheel-bearing housing to tightening torque.
- Carry out axle alignment ⇒ [“3.3 Axle alignment”, page 309](#) .

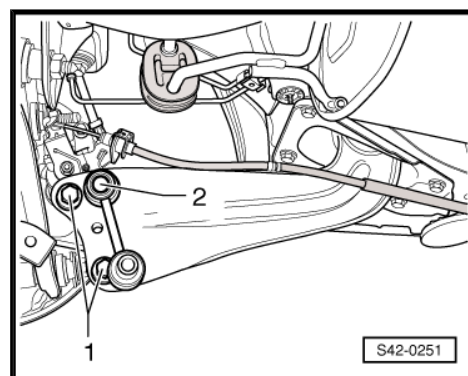


Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



- ◆ ⇒ [“5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive”, page 249](#)
- ◆ ⇒ [“4.1.2 Summary of components - strut / shock absorber, spring, vehicles with all-wheel drive”, page 240](#)
- ◆ ⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)
- ◆ ⇒ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46

5.3 Removing and installing wheel-bearing unit

⇒ [“5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive”, page 258](#)

⇒ [“5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive”, page 261](#)

5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive

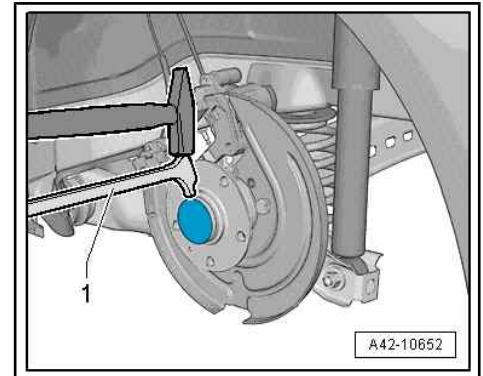
Special tools and workshop equipment required

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- ◆ Insertion sleeve - MP1-228 (3241)-
- ◆ Hub cap extractor - MP5-404 (VW 637/2)-
- ◆ Socket insert XZN 18 - T10162-

Removing

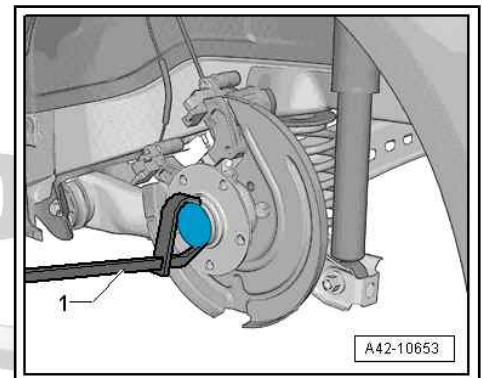
- Remove wheel.
- Release cap from its position by gently tapping the claw of the hub cap extractor -1-.



- Press off cap.
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g.. hang on the structure in such a way that the weight of the brake caliper does not burden or damage the brake hose ⇒ braking systems; Rep. gr. 46 .

Note

Do not hang the brake caliper on the brake hose - risk of damage.



- Remove brake disc.
- Remove screw -1- with socket insert XZN 18 - T10162- -2-.



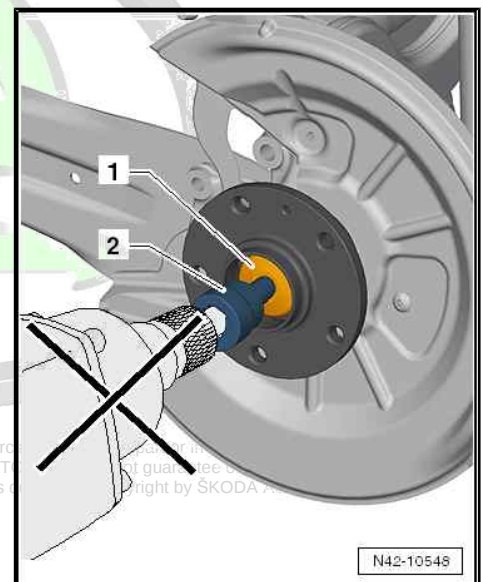
Caution

Do not use an impact screwdriver for loosening the screw!

- Remove wheel bearing unit from the axle stud.

Note

- ◆ *Do not damage the sensor ring for ABS.*
- ◆ *Avoid any contamination or damage to the gasket when handling and storing it.*





- When storing, the bearing -1- must always point upwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Carefully pull the wheel hub with wheel bearing -2- up to the stop onto axle stud.



Note

- ◆ Do not damage the sensor ring for ABS.
- ◆ Ensure that the wheel hub with the wheel bearing does not tilt on the axle stud.

- Install new screw -1- with socket insert XZN 18 - T10162-2-.



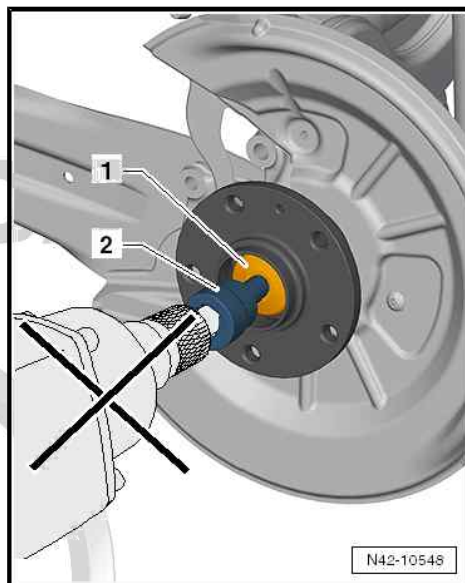
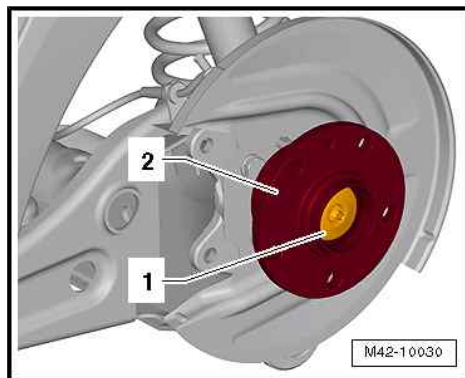
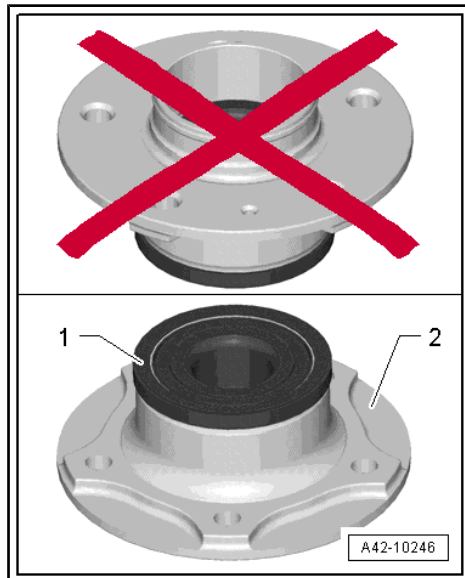
Caution

Do not use an impact screwdriver for tightening the screw!



Note

- ◆ First of all tighten screw with the torque wrench to the given tightening torque.
- ◆ Use a rigid wrench for tightening to the torquing angle.
- ◆ Use new screw for wheel hub.



- Drive in the dust cap with insertion sleeve - MP1-228 (3241)-1-.

i Note

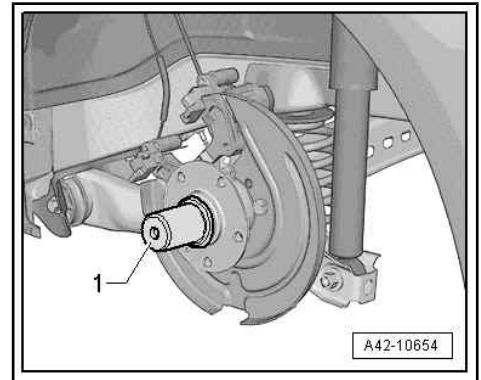
- ◆ Always replace dust caps.
- ◆ Damaged dust caps allow moisture to penetrate. Therefore absolutely use the shown tool.

Tightening torques - summaries of components

i Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive”, page 246](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46



5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive

Removing

- Release drive shaft screw connection
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#),

i Note

- ◆ Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.
- ◆ If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.
- ◆ It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.
- ◆ Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:
- ◆ Install an outer joint instead of the cardan shaft.
- ◆ Tighten outer joint to 120 Nm.

- Remove wheel.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#).
- Remove cardan shaft
⇒ [“6.3.1 Removing and installing cardan shaft”, page 279](#).
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g.. hang on the structure in such a way that the weight of the brake caliper does not

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burden or damage the brake hose ⇒ braking systems; Rep.
gr. 46 .



Note

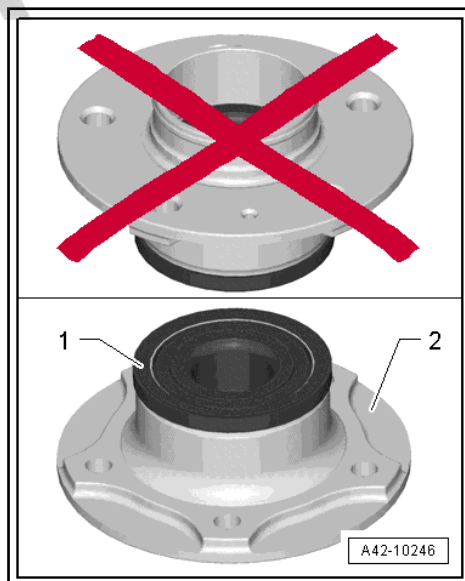
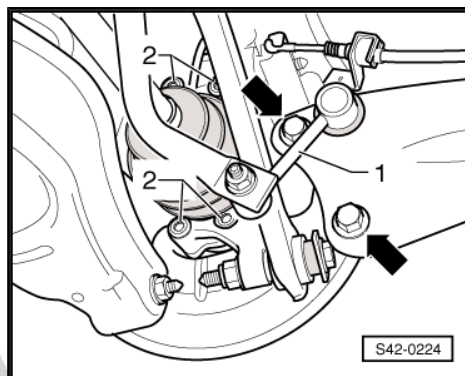
Do not hang the brake caliper on the brake hose.

- Remove brake disc.
- Remove cover plate.
- Remove screws -2-.
- Pull the wheel bearing out of the wheel-bearing housing.
- Remove wheel bearing unit from the axle stud.



Note

- ◆ *Do not damage the sensor ring for ABS.*
- ◆ *Avoid any contamination or damage to the gasket when handling and storing it.*
- When storing, the bearing -1- must always point upwards.



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- When picking up the wheel bearing, never take hold from the inside.
- Only take hold of the wheel bearing from the outside.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- The wheel bearing housing is only to be bolted in the unladen weight position
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#).
- Tighten fixing screw of the drive shaft
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#).

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive”, page 249](#)
- ◆ ⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)
- ◆ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46

5.4 Replacing the rubber-metal bearing for wheel-bearing housing

⇒ [“5.4.1 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with front-wheel drive”, page 263](#)

⇒ [“5.4.2 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with four-wheel drive”, page 265](#)

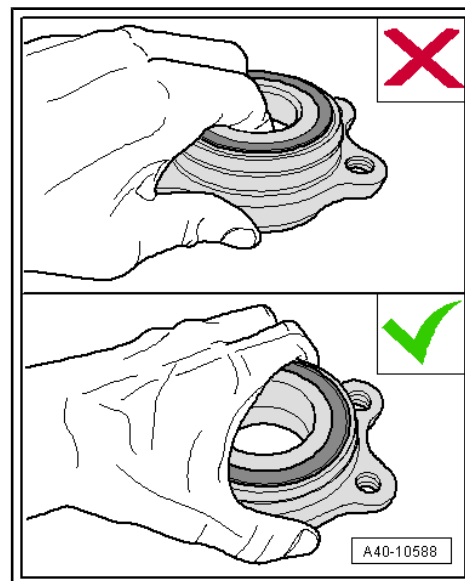
5.4.1 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with front-wheel drive

Special tools and workshop equipment required

- ◆ Nut - MP5-401/3 (3346)-
- ◆ Screw - MP5-401/2 (3346)-
- ◆ Pipe section - MP5-402/3 (3301)-
- ◆ Assembly tool - MP5-402 (3301)-
- ◆ Assembly tool - T30017/1 (3350)-
- ◆ Assembly tool - T30017/2 (3350)-
- ◆ Knock-in bushing - T30034 (41-501)-
- ◆ Press-in ring - MP3-483 (30204)-

Removing

- Remove wheel.





- Remove coil spring
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g.. hang on the structure in such a way that the weight of the brake caliper does not burden or damage the brake hose ⇒ braking systems; Rep. gr. 46 .
- Remove brake disc.
- Removing the wheel hub with wheel bearing
⇒ ["5.3.1 Removing and installing wheel hub with wheel bearing, vehicles with front-wheel drive", page 258](#) .
- Remove cover plate.
- Release screw -arrow- for bottom suspension arm -1-.

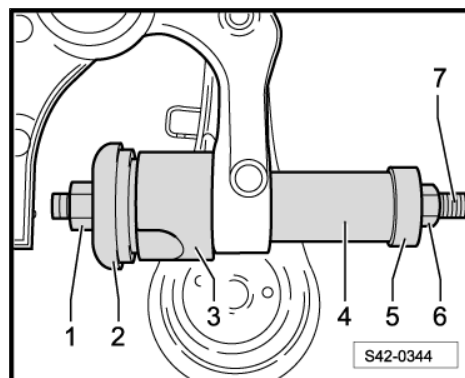
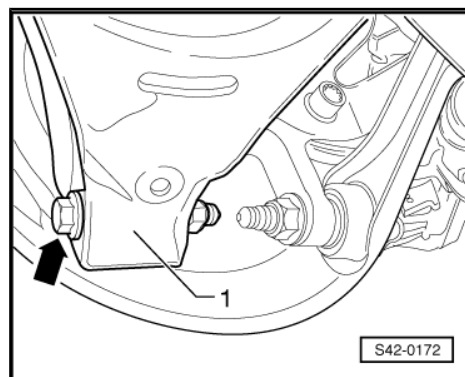
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Pulling out the rubber-metal bearing

- Position the special tools as shown in the figure.

- 1 - Nut - MP5-401/3 (3346)-
- 2 - Assembly tool - MP5-402 (3301)-
- 3 - Pipe section - MP5-402/3 (3301)-
- 4 - Knock-in bushing - T30034 (41-501)-
- 5 - Assembly tool - T30017/1 (3350)-
- 6 - Nut, commercially available
- 7 - Screw - MP5-401/2 (3346)-

- Pull out rubber-metal bearing by turning the nut -1-.



Inserting the rubber-metal bearing



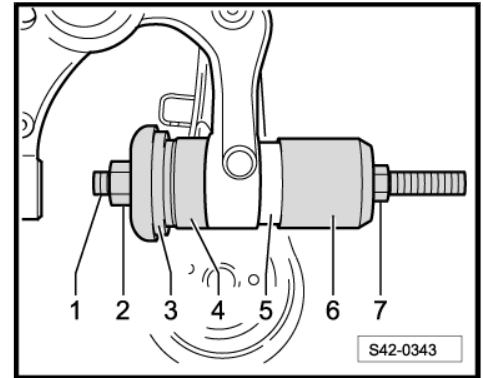
Note

- ◆ *Do not use any lubricant!*
- ◆ *Carefully insert the rubber-metal bearing, so that it does not tilt.*

– Position the special tools as shown in the figure.

- 1 - Screw - MP5-401/2 (3346)-
- 2 - Nut - MP5-401/3 (3346)-
- 3 - Assembly tool - MP5-402 (3301)-
- 4 - Assembly tool - T30017/2 (3350)-
- 5 - Rubber-metal bearing
- 6 - Press-in ring - MP3-483 (30-204)-
- 7 - Nut, commercially available

– Insert the rubber-metal bearing -5- by turning the nut -2-.



Installing

Installation is carried out in the reverse order. When installing, note the following:



Note

The tightening of the track control arm and shock absorber to the wheel-bearing housing must only be performed, if the dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (unladen weight position)!
⇒ "3.5 Lift the wheel bearing in the unladen weight position", page 5.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ "5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive", page 246
- ◆ ⇒ "2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive", page 198
- ◆ ⇒ "1.2 Tightening torque of the wheel screws", page 301
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46

5.4.2 Replacing the rubber-metal bearing for wheel-bearing housing, vehicles with four-wheel drive

Special tools and workshop equipment required

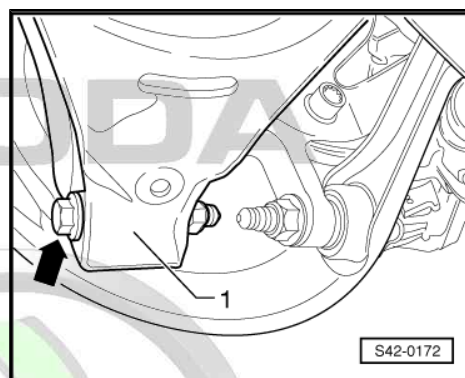
- ◆ Nut - MP5-401/3 (3346)-



- ◆ Screw - MP5-401/2 (3346)-
- ◆ Pipe section - MP5-402/3 (3301)-
- ◆ Assembly tool - MP5-402 (3301)-
- ◆ Assembly tool - T30017/1 (3350)-
- ◆ Assembly tool - T30017/2 (3350)-
- ◆ Knock-in bushing - T30034 (41-501)-
- ◆ Press-in ring - MP3-483 (30204)-

Removing

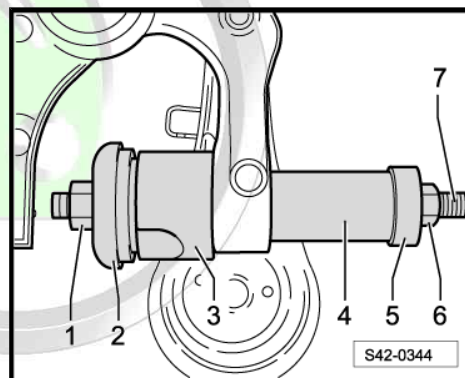
- Remove wheel.
- Remove coil spring
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Disconnect the brake caliper with connected brake hose and connected hand brake cable and e.g.. hang on the structure in such a way that the weight of the brake caliper does not burden or damage the brake hose ⇒ braking systems; Rep. gr. 46 .
- Remove brake disc.
- Remove wheel hub
⇒ ["5.3.2 Removing and installing wheel hub with wheel bearing, vehicles with four-wheel drive", page 261](#) .
- Remove cover plate.
- Release screw -arrow- for bottom suspension arm -1-.



Pulling out the rubber-metal bearing

- Position the special tools as shown in the figure.

- 1 - Nut - MP5-401/3 (3346)-
- 2 - Assembly tool - MP5-402 (3301)-
- 3 - Pipe section - MP5-402/3 (3301)-
- 4 - Knock-in bushing - T30034 (41-501)-
- 5 - Assembly tool - T30017/1 (3350)-
- 6 - Nut, commercially available
- 7 - Screw - MP5-401/2 (3346)-



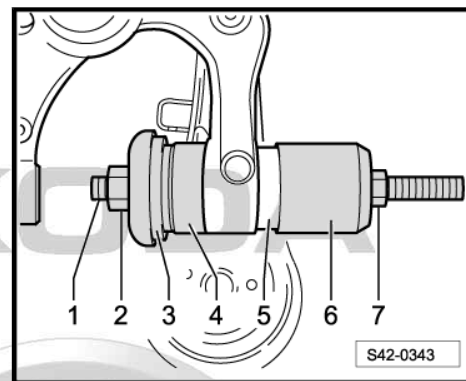
- Pull out rubber-metal bearing by turning the nut -1-.

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Inserting the rubber-metal bearing

– Position the special tools as shown in the figure.

- 1 - Screw - MP5-401/2 (3346)-
- 2 - Nut - MP5-401/3 (3346)-
- 3 - Assembly tool - MP5-402 (3301)-
- 4 - Assembly tool - T30017/2 (3350)-
- 5 - Rubber-metal bearing
- 6 - Press-in ring - MP3-483 (30-204)-
- 7 - Nut, commercially available



Note

- ◆ *Do not use any lubricant!*
 - ◆ *Carefully insert the rubber-metal bearing, so that it does not tilt.*
- Insert the rubber-metal bearing -5- by turning the nut -2-.

Installing

Installation is carried out in the reverse order. When installing, note the following:



Note

The tightening of the track control arm at the wheel-bearing housing must only be performed, if the dimension between the wheel hub centre and the lower edge of the wheel house is achieved (unladen weight position).

⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#)

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Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive", page 249](#)
- ◆ ⇒ ["2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202](#)
- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 288](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)
- ◆ Brake caliper, disc ⇒ braking systems; Rep. gr. 46

5.5 Removing and installing trailing arm with bracket

Special tools and workshop equipment required

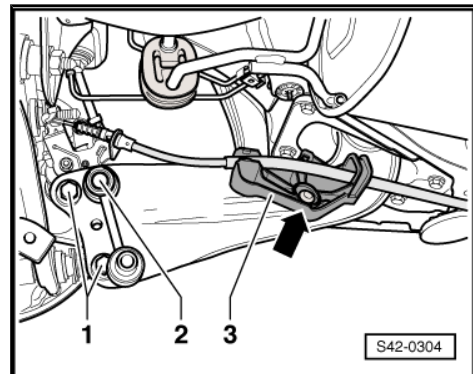
- ◆ Engine and gearbox jack , e.g. -V.A.G 1383A - or -VAS6931-



◆ Tensioning straps - T10038-

Removing

- Remove wheel.
- Remove holder for hand brake cable from trailing arm
-arrow- (screw or expanding rivet - depending on the design).

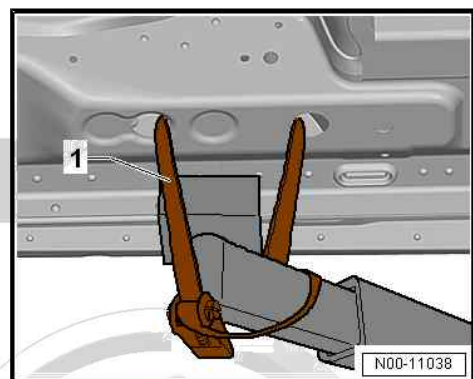


- Use tensioning straps - T10038- to strap vehicle to support beams of lifting platform on both sides.

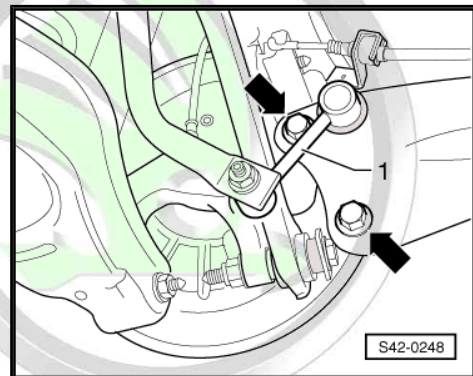


Note

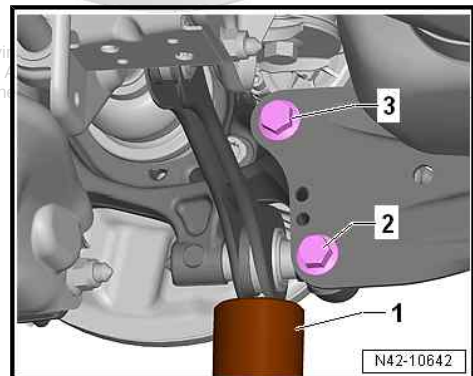
If the vehicle is not lashed, there is a risk of the vehicle toppling off the lift platform.



- Remove coupling rod -1- from anti-roll bar and trailing arm with wheel-bearing housing.



- Place the engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- -1- underneath the track rod and raise slightly.
- Remove screw -2- and -3-.
- Remove the engine and gearbox jack e.g. -V.A.G 1383A- or -VAS6931- -1- under the track rod.

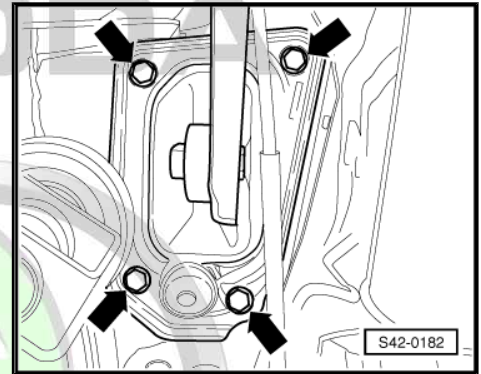


- Mark the installed position of the bracket on the body.
- Release the screws of the bracket -arrows-.
- Remove the trailing arm with the bracket.

Replace the trailing arm

If the trailing arm should be replaced, the bracket must be removed from the trailing arm.

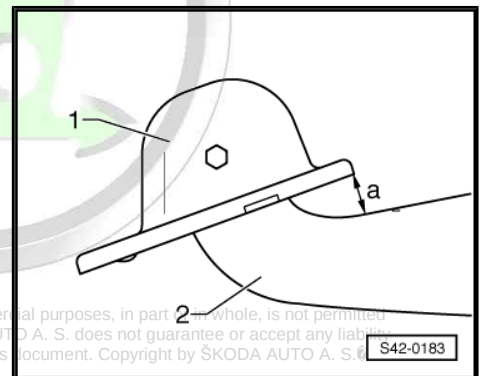
The installation position of the bracket to the trailing arm must then be adjusted.



Determine the fitting position of the bracket to the trailing arm

The dimension -a- is 34 ± 1 mm.

- 1 - Bearing bracket
- 2 - Trailing arm
- If the dimension -a- is adjusted, tighten the screw.



Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Pay attention to correct installation position of trailing arm and wheel-bearing housing.

Installation position of trailing arm and wheel-bearing housing.

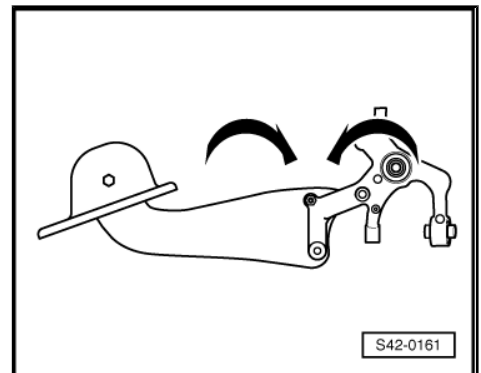
The screwed connection of the trailing arm/wheel-bearing housing must only be tightened if all other components (spring and shock absorber are required) of the wheel suspension in question are already fitted. For tightening, the wheel-bearing housing must be in the unladen weight position

⇒ **“3.5 Lift the wheel bearing in the unladen weight position”, page 5**. Only move the trailing arm and the wheel-bearing housing into the necessary position for tightening the screwed connection -arrows- under these conditions.

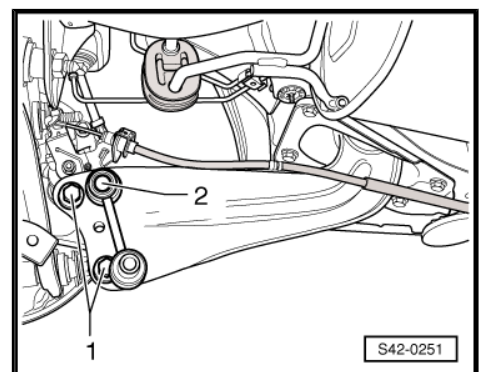


Note

Note the following work steps and absolutely ensure that you follow the sequence!

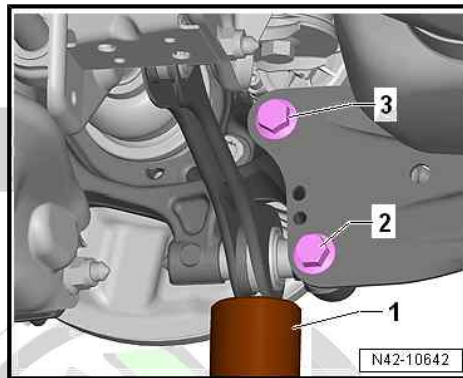


- Screw trailing arm including bracket with screws -1- onto the wheel-bearing housing, but do not tighten yet.
- Insert the coupling rod -2- into the trailing arm with wheel-bearing housing, but do not tighten the nut yet!
- Insert the coupling rod -2- into the trailing arm with wheel-bearing housing, but do not tighten the nut yet!

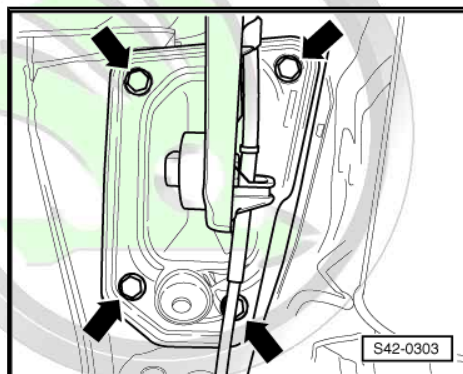




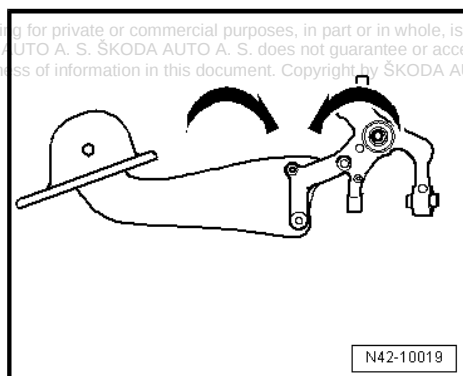
- Raise wheel-bearing housing with trailing arm using engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- -1- until the bracket rests on the body.



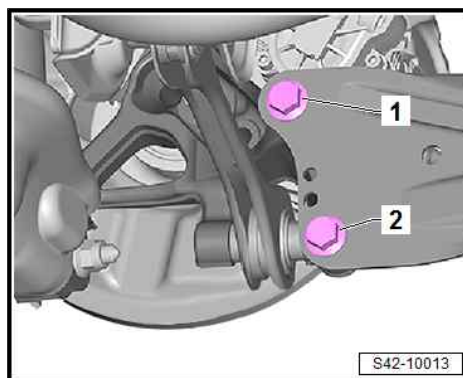
- Tighten screws -arrows- to the marked fitting location - to the "former positions".
- Remove the engine/gearbox jack e.g. -V.A.G 1383A- or -VAS6931- from underneath the vehicle.



The screwed connection of the trailing arm/wheel-bearing housing must only be tightened if all other components (spring and shock absorber are required) of the wheel suspension in question are already fitted. The wheel suspension must be in the rebound state for tightening. Only in this state do the trailing arm and wheel bearing housing move into the necessary position -arrows-.



- Tighten screws -1- and -2- of trailing arm with tightening torque, while doing so pay attention to the required position of the trailing arm and wheel-bearing housing.



- Tighten coupling rod -1- at trailing arm and wheel-bearing housing and anti-roll bar to the tightening torque.
- Carry out axle alignment ➔ [“3.3 Axle alignment”, page 309](#) .

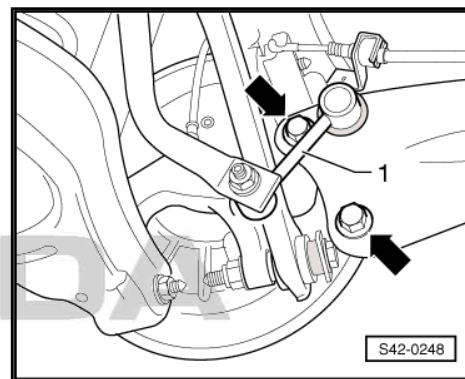
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ➔ [“5.1.1 Summary of components: wheel-bearing housing, trailing arm, vehicles with front-wheel drive”, page 246](#)
- ◆ ➔ [“5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive”, page 249](#)
- ◆ ➔ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ◆ ➔ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)
- ◆ ➔ [“3.1.1 Summary of components - anti-roll bar, vehicles with front-wheel drive”, page 232](#)
- ◆ ➔ [“3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive”, page 233](#)
- ◆ ➔ [“1.2 Tightening torque of the wheel screws”, page 301](#)



5.6 Repairing trailing arm

Special tools and workshop equipment required

- ◆ Assembly tool - T10230/10-
- ◆ Ejection tool - T30082 (3372)-
- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-

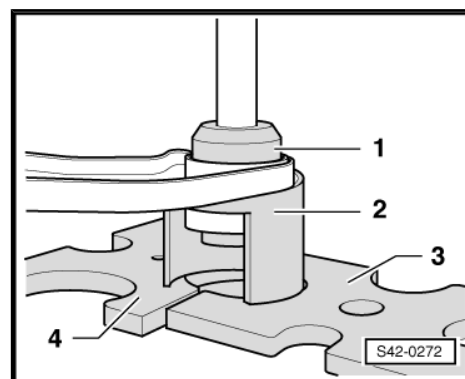
Pulling out the rubber-metal bearing

- Removing the trailing arm
➔ [“5.5 Removing and installing trailing arm with bracket”, page 267](#) .
- Removing bracket ➔ [page 269](#) .
- Position the special tools as shown in the figure.

- 1 - Assembly tool - T10230/10-
 - 2 - Ejection tool - T30082 (3372)-
 - 3 - Pressure plate - MP3-406 (VW 401)-
 - 4 - Pressure plate - MP3-407 (VW 402)-
- Pulling out the rubber-metal bearing.

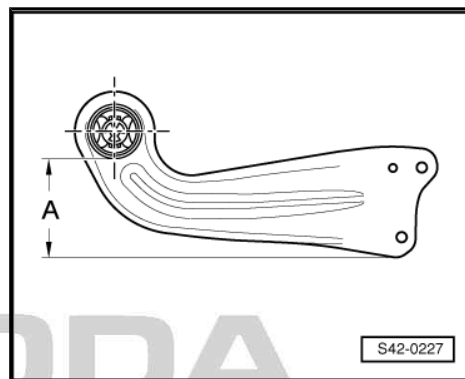
Inserting the rubber-metal bearing

- Position the trailing arm on an even surface.
- Mark a vertical line on the bushing of the trailing arm.

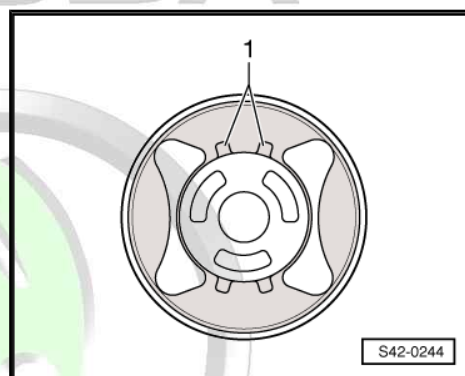




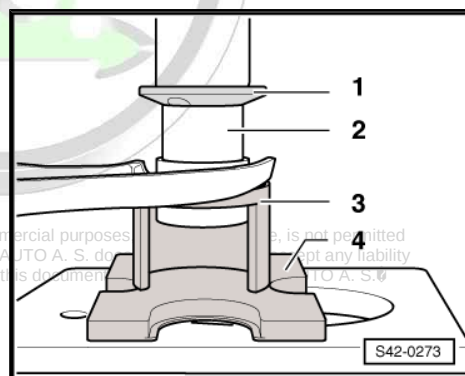
Dimension -A- = 114 mm



The marked line must be between the lobes -1- after inserting.



- Position the special tools as shown in the figure.
- 1 - Pressure plate e.g. -T10230/12- , the chamfer must point to the rubber-metal bearing.
- 2 - Rubber-metal bearing
- 3 - Ejection tool - T30082 (3372)-
- 4 - Pressure plate - MP3-407 (VW 402)-
- Insert the rubber-metal bearing flush.
- Install bracket at trailing arm
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#) .
- Installing the trailing arm
⇒ ["5.5 Removing and installing trailing arm with bracket", page 267](#) .
- Carry out axle alignment ⇒ ["3.3 Axle alignment", page 309](#) .



6 Drive shaft

⇒ [“6.1 Summary of components - cardan shaft”, page 273](#)

⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 278](#)

⇒ [“6.3 Removing and installing cardan shaft”, page 279](#)

⇒ [“6.4 Disassembling and assembling cardan shaft”, page 282](#)

⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)

⇒ [“6.6 Inspecting outer CV joint”, page 290](#)

⇒ [“6.7 Inspecting inner CV joint”, page 291](#)

6.1 Summary of components - cardan shaft

⇒ [“6.1.1 Summary of components - cardan shaft, vehicles up to 06/2007”, page 273](#)

⇒ [“6.1.2 Summary of components - cardan shaft, vehicles as of MY 07/2007”, page 276](#)

6.1.1 Summary of components - cardan shaft, vehicles up to 06/2007

The types of joints must be distinguished according to the diameter

⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 278](#) .



Note

- ◆ *Before removing the joints and the joint boots, thoroughly clean their surrounding areas.*
- ◆ *When disassembling the joint, remove the old lubricant and any dirt present.*
- ◆ *Clean the joint with great care.*
- ◆ *Dispose of old lubricant and cleaning agent in compliance with the applicable regulations.*
- ◆ *Place removed and cleaned parts on a clean surface and cover as needed. Use lint-free cloths!*
- ◆ *Carefully cover removed parts if the repair is not completed immediately.*
- ◆ *Only install clean parts: remove spare parts from their wrapping immediately before fitting. Do not use any parts which have been stored unwrapped (e.g. on a shelf or in a tool box etc...).*

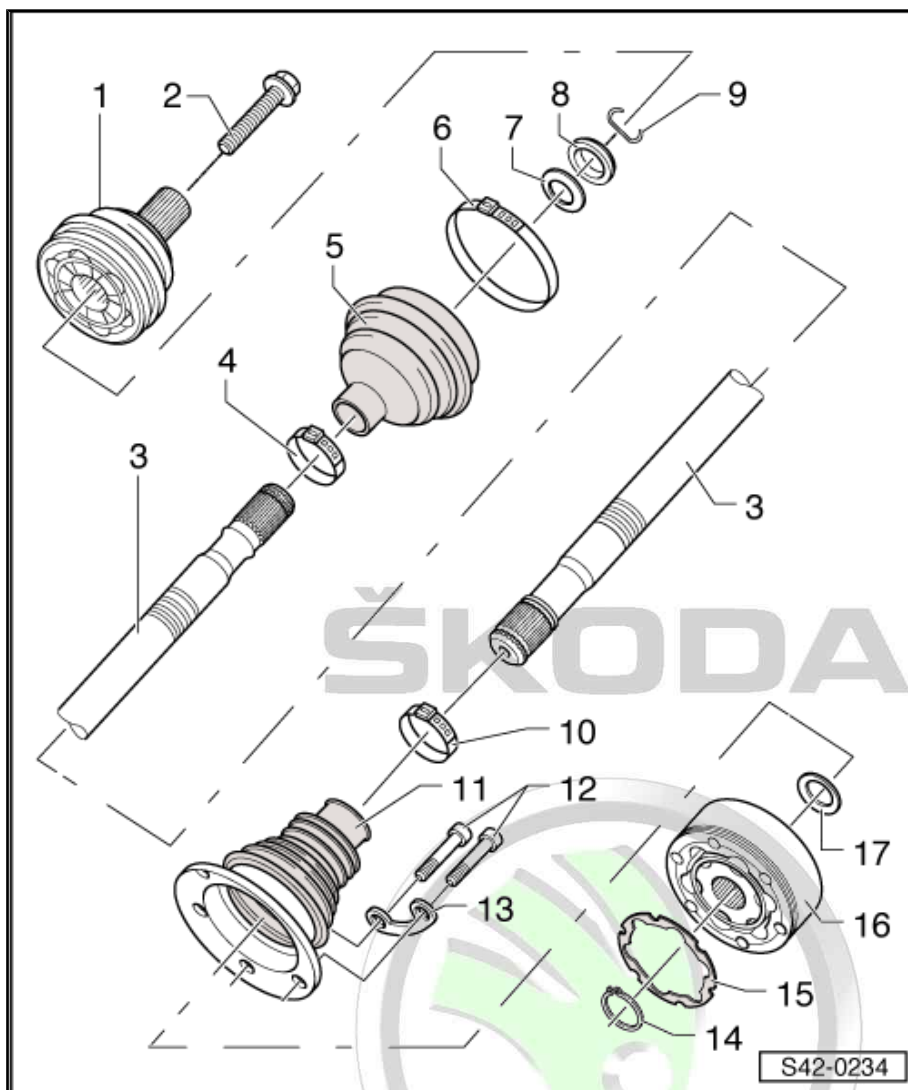


1 - Outer CV joint complete

- ☐ Type of joint, grease quantity
⇒ [“6.2 Designation, distinguish the diameter as specified and grease quantity for joints”, page 278](#)
- ☐ must be replaced completely
- ☐ Removing and installing
⇒ [“6.4 Disassembling and assembling cardan shaft”, page 282](#)
- ☐ Check
⇒ [“6.6 Inspecting outer CV joint”, page 290](#)

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)
- ☐ Tightening torque
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#)



3 - Drive shaft

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

4 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the smaller diameter”, page 285](#)

5 - Collar

- ☐ inspect for tears and chafing points

6 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. “Tighten the open warm-type clamp at the larger diameter”, page 285](#)

7 - Disc spring

- ☐ Fitting position
⇒ [Fig. “Fitting position of the disc spring and thrust ring on the outer joint for vehicles up to 06.2007”, page 283](#)

8 - Thrust ring

- ☐ Fitting position
⇒ [Fig. “Fitting position of the disc spring and thrust ring on the outer joint for vehicles up to 06.2007”, page 283](#)

9 - Circlip

- ☐ replace after each removal

- ☐ insert in the shaft groove

10 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten warm-type clamp", page 288](#)

11 - Collar

- ☐ with sheet metal cover
- ☐ without ventilation hole
- ☐ inspect for tears and chafing points
- ☐ drive off from joint with a drift
- ☐ before the installation on the joint, cover the sealing surface with -D 454 300 A2-
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

12 - Screw

- ☐ M8 x 48
- ☐ first of all pre-tighten all screws crosswise up to 10 Nm
- ☐ Replace after removal
- ☐ 20 Nm + 180°

13 - Supporting plate

14 - Circlip

- ☐ replace after each removal
- ☐ removing and installing with circlip pliers

15 - Seal

- ☐ The adherend must be free of grease and oil!
- ☐ replace after each removal
- ☐ Pull off protective foil and stick in joint
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

16 - Inner joint

- ☐ Type of joint, grease quantity
⇒ ["6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 278](#)
- ☐ must be replaced completely
- ☐ pressing off ⇒ [Fig. "Press off the inner joint", page 286](#)
- ☐ pressing on ⇒ [Fig. "Pressing on the inner joint", page 287](#)
- ☐ Check ⇒ ["6.7 Inspecting inner CV joint", page 291](#)

17 - Disc spring

- ☐ with internal serration
- ☐ Fitting position ⇒ [Fig. "Fitting position of the disc spring at inner joint", page 286](#)

6.1.2 Summary of components - cardan shaft, vehicles as of MY 07/2007

The types of joints must be distinguished according to the diameter

⇒ **"6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 278** .



Note

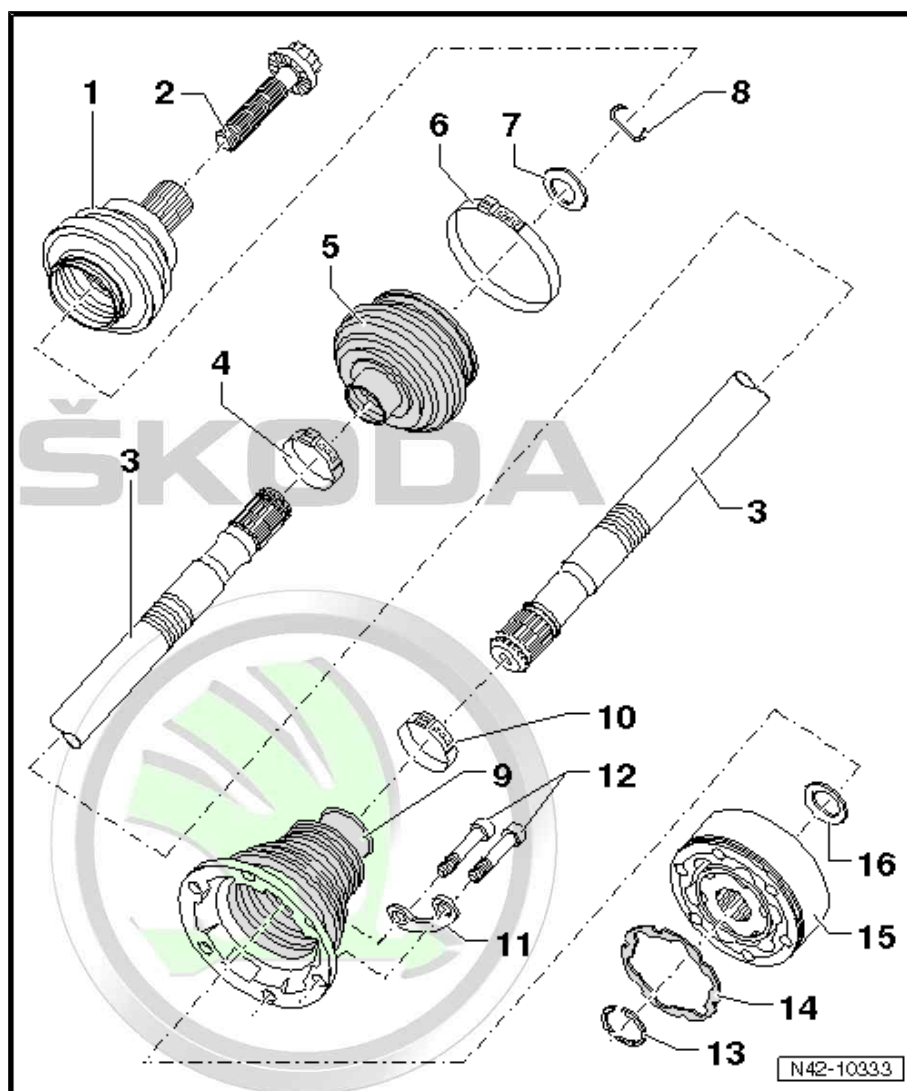
- ◆ Before removing the joints and the joint boots, thoroughly clean their surrounding areas.
- ◆ When disassembling the joint, remove the old lubricant and any dirt present.
- ◆ Clean the joint with great care.
- ◆ Dispose of old lubricant and cleaning agent in compliance with the applicable regulations.
- ◆ Place removed and cleaned parts on a clean surface and cover as needed. Use lint-free cloths!
- ◆ Carefully cover removed parts if the repair is not completed immediately.
- ◆ Only install clean parts: remove spare parts from their wrapping immediately before fitting. Do not use any parts which have been stored unwrapped (e.g. on a shelf or in a tool box etc...).

1 - Outer CV joint complete

- ☐ Type of joint, grease quantity
⇒ **"6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 278**
- ☐ must be replaced completely
- ☐ Removing and installing
⇒ **"6.4 Disassembling and assembling cardan shaft", page 282**
- ☐ Check
⇒ **"6.6 Inspecting outer CV joint", page 290**

2 - Screw

- ☐ replace after each removal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ When loosening and tightening the screw, the prescribed procedure must be followed
- ☐ Removing and installing
⇒ **"6.5 Loosen and tighten cardan shaft screwed connection", page 288**
- ☐ Tightening torque
⇒ **"6.5 Loosen and tighten cardan shaft screwed connection", page 288**



3 - Drive shaft

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

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4 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten the open warm-type clamp at the smaller diameter" , page 285](#)

5 - Collar

- ☐ inspect for tears and chafing points

6 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten the open warm-type clamp at the larger diameter" , page 285](#)

7 - Disc spring

- ☐ Fitting position
⇒ [Fig. "Fitting position of the disc spring on the outer joint for vehicles as of 07.2007" , page 284](#)

8 - Circlip

- ☐ replace after each removal
- ☐ insert in the shaft groove

9 - Collar

- ☐ with sheet metal cover
- ☐ without ventilation hole
- ☐ inspect for tears and chafing points
- ☐ drive off from joint with a drift
- ☐ before the installation on the joint, cover the sealing surface with -D 454 300 A2-
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

10 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [Fig. "Tighten warm-type clamp" , page 288](#)

11 - Supporting plate

12 - Screw

- ☐ M8 x 48
- ☐ first of all pre-tighten all screws crosswise up to 10 Nm
- ☐ Replace after removal
- ☐ 20 Nm + 180°

13 - Circlip

- ☐ replace after each removal
- ☐ removing and installing with circlip pliers

14 - Seal

- ☐ replace after each removal
- ☐ The adherend must be free of grease and oil!
- ☐ Pull off protective foil and stick in joint
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

15 - Inner joint

- ☐ Type of joint, grease quantity
⇒ ["6.2 Designation, distinguish the diameter as specified and grease quantity for joints" , page 278](#)
- ☐ must be replaced completely
- ☐ pressing off ⇒ [Fig. "Press off the inner joint" , page 286](#)
- ☐ pressing on ⇒ [Fig. "Pressing on the inner joint" , page 287](#)
- ☐ Check ⇒ ["6.7 Inspecting inner CV joint" , page 291](#)

16 - Disc spring

- ☐ with internal serration



- ❑ Fitting position ⇒ [Fig. “Fitting position of the disc spring at inner joint”](#), page 286

6.2 Designation, distinguish the diameter as specified and grease quantity for joints

Outer joint

Denomination	Diameter	Grease
UF100	90 mm	110 g, grind the grease evenly in the joint
CG-FIX2000	82 mm	45 g, grind the grease evenly in the joint

Use the relevant grease for outer joints, assignment ⇒ Electronic Catalogue of Original Parts .

Inner joint

Denomination	Diameter	Grease
VL100	100 mm	110 g, grind the grease evenly in the joint

Use heat-resistant grease for inner joints, assignment ⇒ Electronic Catalogue of Original Parts .

6.3 Removing and installing cardan shaft

⇒ [“6.3.1 Removing and installing cardan shaft”, page 279](#)

⇒ [“6.3.2 Push the cardan shaft out of the wheel hub.”, page 281](#)

6.3.1 Removing and installing cardan shaft



Note

During disassembly and assembly work on the vehicle, the drive shafts must not hang down loosely and through overstretching rest against the stop in the joints.

Removing

- Determine dimension “a”
⇒ [“3.5 Lift the wheel bearing in the unladen weight position”, page 5](#) .
- Remove fixing screw of drive shaft at wheel hub
⇒ [“6.5 Loosen and tighten cardan shaft screwed connection”, page 288](#) .



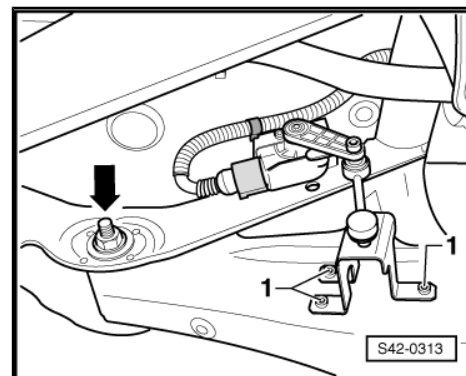
Note

- ◆ *Wheel bearings must not be subjected to load after bolt securing cardan shaft to wheel hub has been loosened.*
- ◆ *If the wheel bearings are loaded through the vehicle's own weight, the wheel bearing will be initially damaged. This shortens the life of the wheel bearing.*
- ◆ *It is not permissible to turn cardan shaft screw more than 90° anti-clockwise if vehicle is standing on its wheels.*
- ◆ *Do not attempt to move the vehicle without the cardan shafts fitted as this would damage the wheel bearing. If a vehicle nevertheless has to be moved, comply with the following:*
- ◆ *Install an outer joint instead of the cardan shaft.*
- ◆ *Tighten outer joint to 120 Nm.*
- Remove wheel.
- Remove coil spring
⇒ [“4.4 Removing and installing spring”, page 242](#) .

Vehicles with vehicle level sender

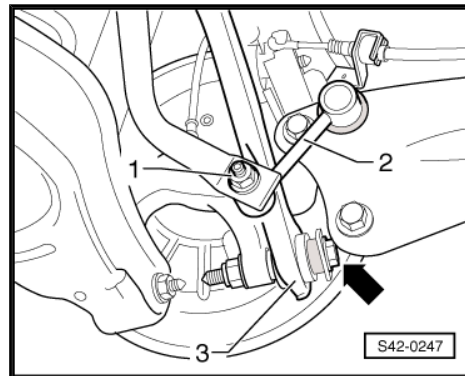
- Remove screw -1- from the holder for rear left vehicle level sensor - G76- .

Continued for all vehicles

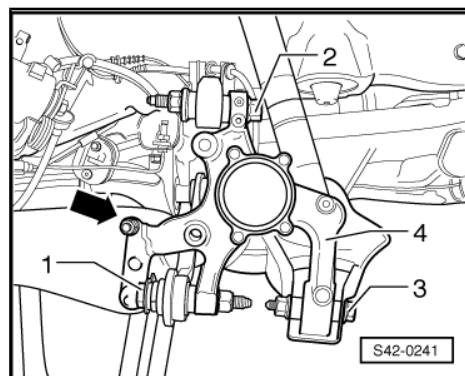




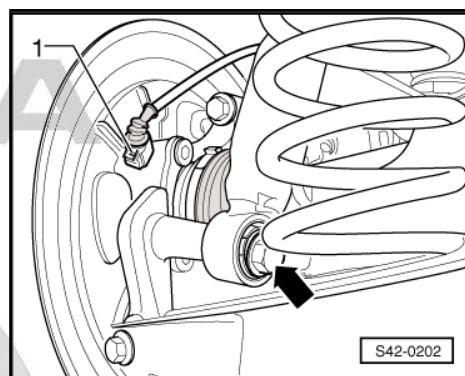
- Remove nut -1- and pull screw out of anti-roll bar and coupling rod -2-.



- Unscrew screw for track rod for rear axle -1- and bottom suspension arm -3- from wheel-bearing housing -4-.



- Unscrew screw -arrow-.
- Remove cardan shaft from flange of final drive.
- Swivel out the wheel-bearing housing and pull the drive shaft out of the internal serration.



Note

*If the drive shaft cannot be removed from the wheel hub, it can be pressed out using the extractor
⇒ "6.3.2 Push the cardan shaft out of the wheel hub." page 281.*

- Remove the cardan shaft.

Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ♦ *Make sure the boot is neither damaged nor twisted.*
- ♦ *Use new washers and new screws.*

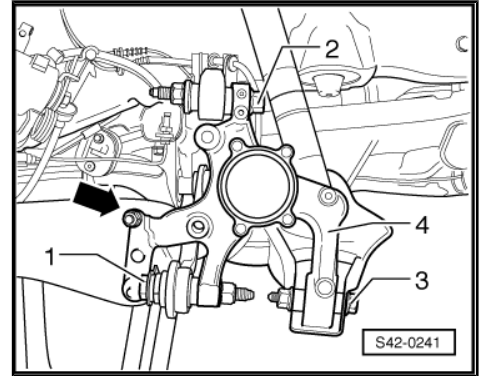
- Position the inner joint of the drive shaft and tighten new screws to 10 Nm crosswise.
- Tighten the screws with internal serrations crosswise according to the specified torque.

- Screw the screw for track rod for rear axle -1- and bottom suspension arm -3- into the wheel-bearing housing -4-.
- Install coil spring
⇒ ["4.4 Removing and installing spring", page 242](#) .
- Tighten fixing screw of drive shaft to wheel hub
⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 288](#) .



Note

The bolted connection to the wheel-bearing housing must only be performed, if the dimension "a" between the wheel hub centre and the lower edge of the wheel house is respected (in unladen weight position)!
⇒ ["3.5 Lift the wheel bearing in the unladen weight position", page 5](#) .



On vehicles with vehicle level sensor, carry out a basic setting for the headlights ⇒ Maintenance ; Booklet Octavia II .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["5.1.2 Summary of components: wheel-bearing housing, trailing arm, vehicles with four-wheel drive", page 249](#)
- ◆ ⇒ ["2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive", page 202](#)
- ◆ ⇒ ["3.1.2 Summary of components - anti-roll bar, vehicles with four-wheel drive", page 233](#)
- ◆ ⇒ ["6.5 Loosen and tighten cardan shaft screwed connection", page 288](#)
- ◆ ⇒ ["1.2 Tightening torque of the wheel screws", page 301](#)

6.3.2 Push the cardan shaft out of the wheel hub.

Special tools and workshop equipment required

- ◆ Extractor - T10520A- or -T10520- with -T10520/5-



Note

If the cardan shaft cannot be pulled out of the wheel hub, it can be pressed out using the extractor - T10520A- .



Note

Before using extractor - T10520A- , make sure that the thrust piece -1- is inserted.

- Secure the extractor - T10520A- -1- with 3 wheel bolts -2- to the wheel hub in order to be able to press out the cardan shaft -3-.

Therefore, the following order must be observed.

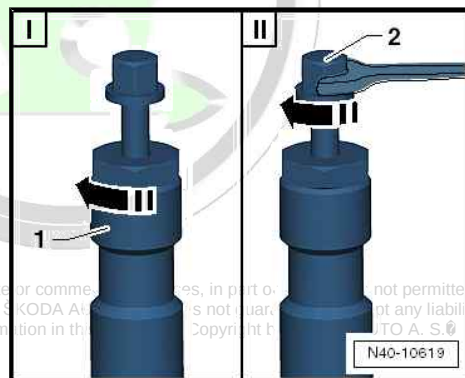
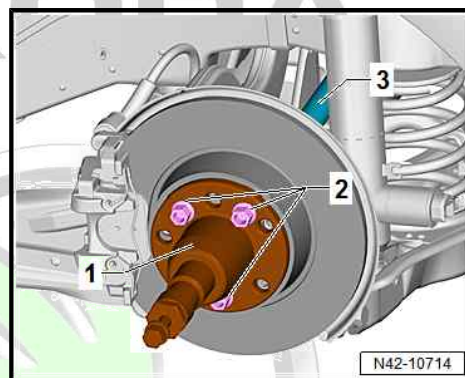
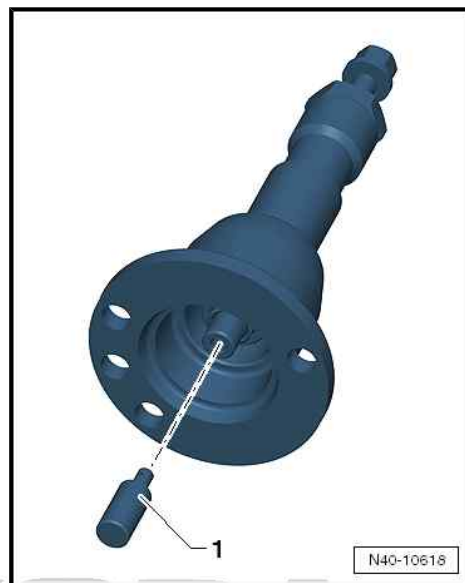
- Tighten the knurled nut -1- by hand.
- Turn the screw -2- and press out the cardan shaft from the wheel hub.



Note

At the end of the procedure or for pressing out cardan shaft further the spindle must be moved to its original position in order to deploy the hydraulic force!

- Remove cardan shaft from wheel hub.



6.4 Disassembling and assembling cardan shaft

Special tools and workshop equipment required

- ◆ Pressure plate - MP3-406 (VW 401)-
- ◆ Pressure plate - MP3-407 (VW 402)-
- ◆ Thrust piece - MP3-411 (VW 454)-
- ◆ Pressure spindle - MP3-448 (VW 408A)-
- ◆ Thrust washer - MP3-455 (VW 447H)-
- ◆ Thrust piece - MP6-405 (VW 411)-
- ◆ Assembly tool - T10065-

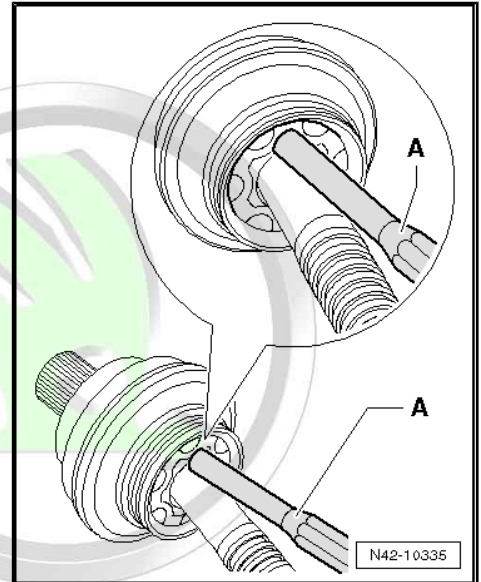
- ◆ Circlip pliers , e.g. -VW 161A-
- ◆ Tensioning pliers , e.g. -V.A.G 1682 A-

Driving off outer constant velocity joint

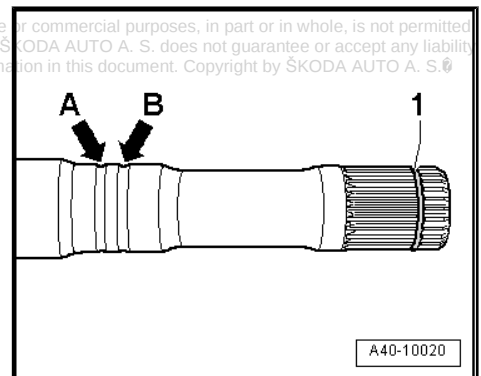
- Clamp the cardan shaft in a vice with protective jaws.
- Open both warm-type clamps and remove the joint boot from the outer joint.
- Remove the CV joint from the drive shaft using a drift (copper or brass) -A-.

The drift must be positioned exactly at the tripod spider of the CV joint.

Drive on the joint

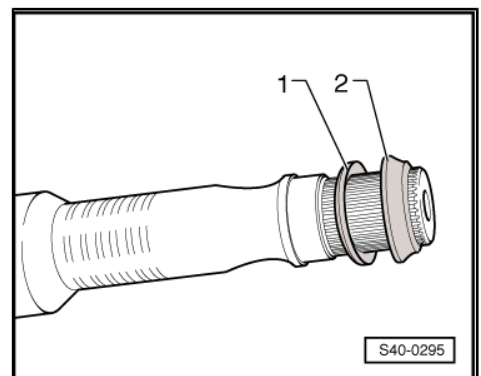


- Replace circlip -1-.
- Push the joint boot and the open warm-type clamp on the drive shaft.
- Pay attention to the fitting position of the disc spring or the thrust ring on the outer joint.



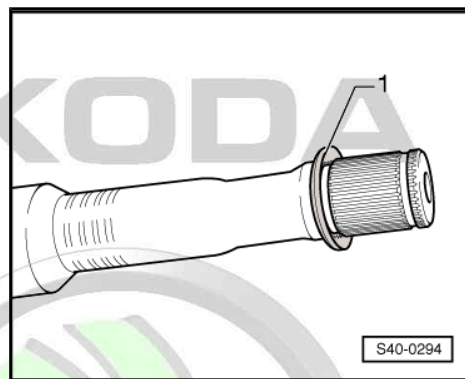
Fitting position of the disc spring and thrust ring on the outer joint for vehicles up to 06.2007

- 1 - Disc spring
- 2 - Thrust ring

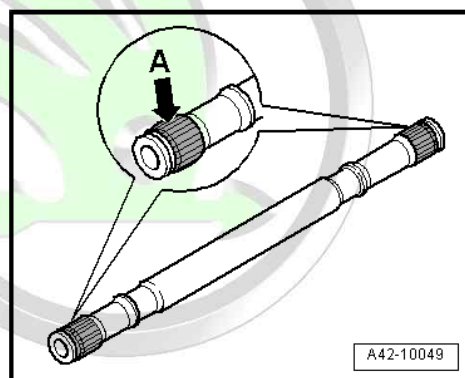


Fitting position of the disc spring on the outer joint for vehicles as of 07.2007

- 1 - Disc spring
- Fill the joint with allowed grease quantity
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 278 .

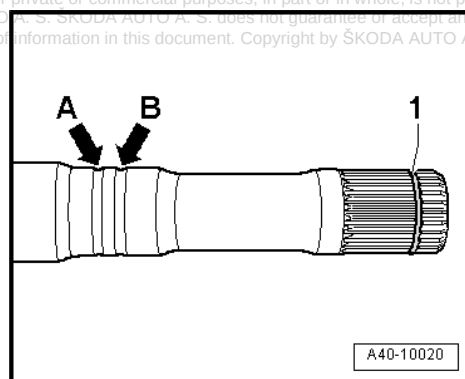


- Thinly coat the serration -A- with joint grease.



- Fit the joint boot in the outer groove -arrow B-.

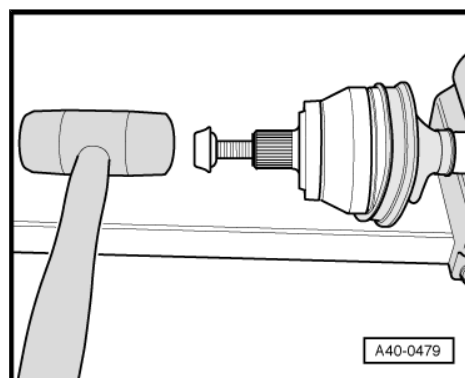
The inner groove -arrow A- must remain visible ("identification groove" for a correct installation of the joint boot).



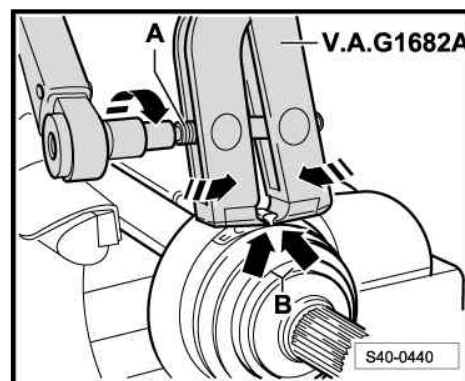
- Screw the old screw for the drive shaft, as shown, into the joint.
- Use a plastic hammer to strike the joint onto the drive shaft until the circlip locks in place.
- Push the joint boot onto the joint.
- Bleed the joint boot.
- Pay attention to the correct position of the joint boot on the outer joint.

The joint boot must be positioned in the groove and must rest on the contour of the joint.

- Tighten the open warm-type clamp on the outer joint.



Tighten the open warm-type clamp at the larger diameter



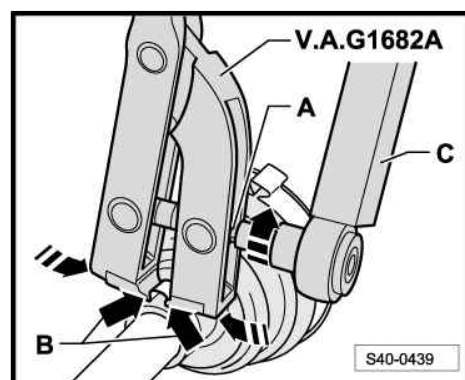
Tighten the open warm-type clamp at the smaller diameter

- Position the tensioning pliers as shown in the figure. Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).



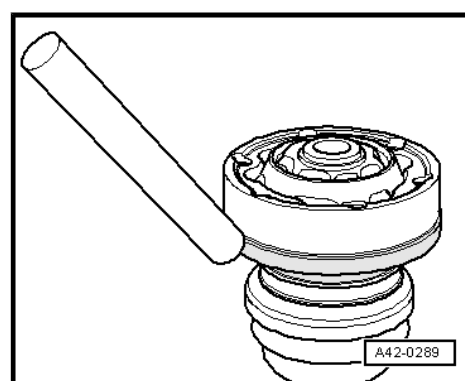
Note

- ◆ *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers, e.g. -V.A.G 1682 A-.*
- ◆ *Tightening torque: 25 Nm.*
- ◆ *Use torque wrench -C-.*
- ◆ *Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.*
- ◆ *If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.*



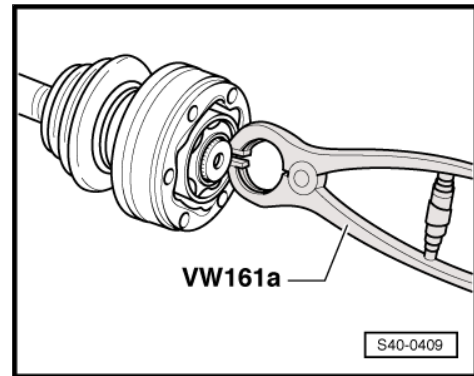
Remove inner joint

- Drive off cover and joint boot with a drift.
- Open warm-type clamp.
- Push the cover with the warm-type clamp in direction of outer joint.





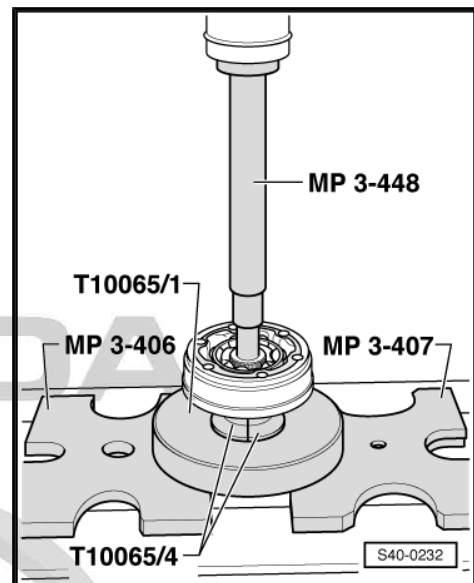
- Remove circlip with a pair of circlip pliers .
- Press the inner joint off the drive shaft.



Press off the inner joint

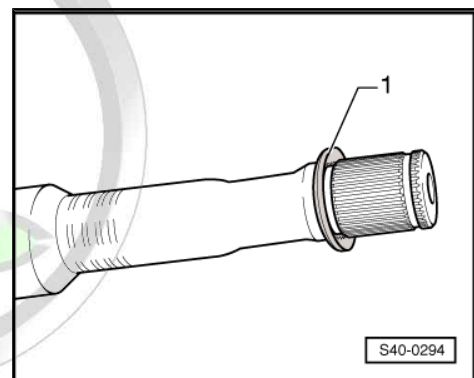
Install inner joint

- Push the open warm-type clamp on the drive shaft.
- Push the sheet metal cover with the joint boot onto the drive shaft.
- Pay attention to the fitting position of the disc spring at the inner joint.

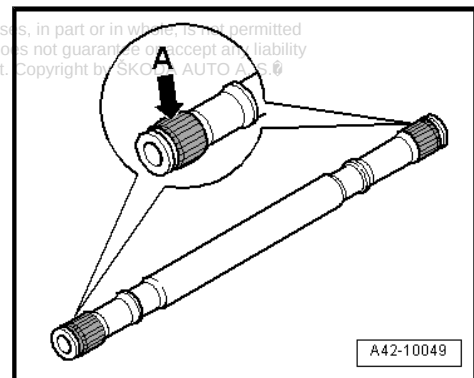


Fitting position of the disc spring at inner joint

- 1 - Disc spring



- Thinly coat the serration -A- with joint grease.
- Press the joint up to the stop.



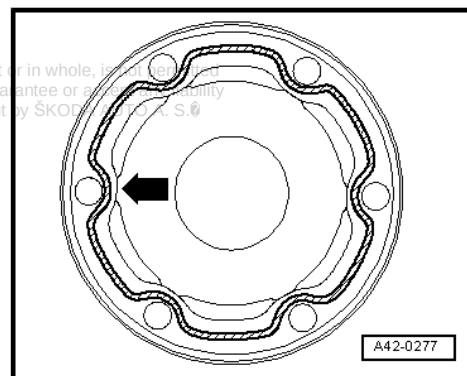
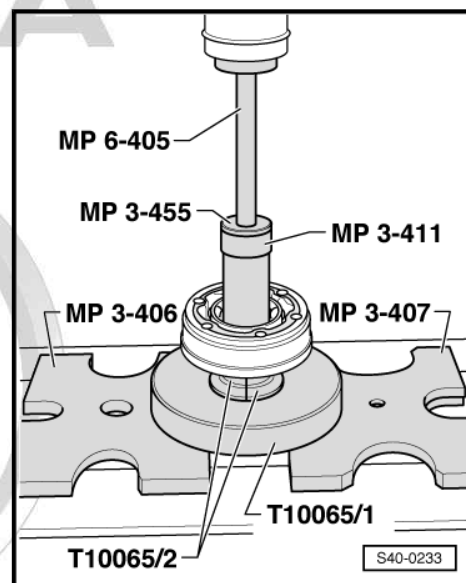
Pressing on the inner joint



Note

Chamfer on inner diameter of the ball hub (serration) must point towards the bearing collar of the drive shaft.

- Install circlip.
- Fill the joint with allowed grease quantity
⇒ "6.2 Designation, distinguish the diameter as specified and grease quantity for joints", page 278.
- Clean and degrease the end faces of the joint.
- Clean and degrease the end face of the sheet metal cover for the joint boot which rests against the joint.
- Apply sealant -D 454 300 A2- on the shaded surfaces of the cover.
- ◆ Sealant bead: apply continuously, Ø 2...3 mm, in the area of the holes from inside -arrow-.
- Push the sheet metal cover with the joint boot onto the joint.



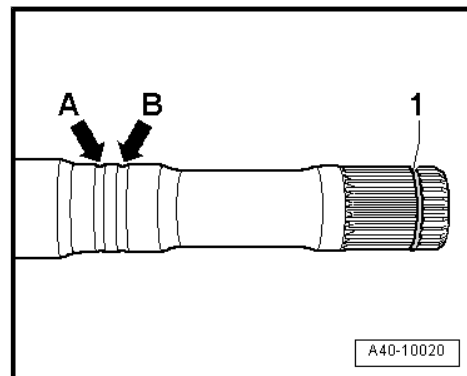
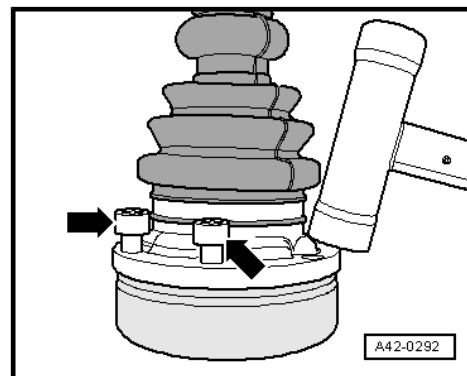
- Align the cover with the joint boot to the screw holes with screws -arrows-.



Note

The alignment must be performed very carefully as this is no longer possible after striking it.

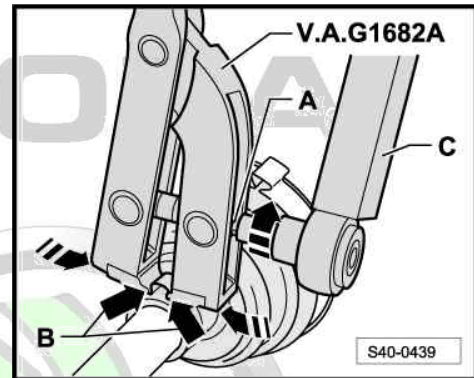
- Use a plastic hammer to strike the sheet metal cover with the joint boot on the joint.
- Wipe off any excess sealant, if necessary.
- Remove the protective foil from the gasket and stick the gasket into the joint from the gearbox side.
- Insert the joint boot into the outer groove of the shaft -arrow B-.
- Install warm-type clamp.





Tighten warm-type clamp

- Position the tensioning pliers as shown in the figure. Make sure the cutting edges of the pliers are positioned in the corners -arrows B- of the open warm-type clamp.
- Tighten the open warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).



Note

- ◆ In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of stainless steel open warm-type clamps, these can only be tightened with tensioning pliers, e.g. -V.A.G 1682 A-.
- ◆ Tightening torque: 25 Nm.
- ◆ Use torque wrench -C-.
- ◆ Make sure that the thread of the spindle -A- of the pliers moves freely. Lubricate with grease if necessary.
- ◆ If it is not smooth, e.g. if the thread is dirty, the necessary clamping force of the open warm-type clamp is not reached at the given torque.

6.5 Loosen and tighten cardan shaft screwed connection

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Special tools and workshop equipment required

- ◆ Socket insert, 24 mm - T10361-



Note

- ◆ If the fixing screw of the drive shaft is loosened more than 90°, the wheel bearings must not be loaded through the weight of the vehicle, i.e. the vehicle must not stand on its wheels.
- ◆ If the wheel bearings are loaded through the weight of the vehicle when the fixing screw for the drive shaft is removed, the inner wheel bearing will be damaged. This shortens the life of the wheel bearing.
- ◆ If the vehicle is standing on its wheels or moves, pay attention to the following: Install the outer joint instead of the drive shaft. Tighten the fixing screw (use the one which was previously removed) of the outer joint to the tightening torque of 120 Nm.

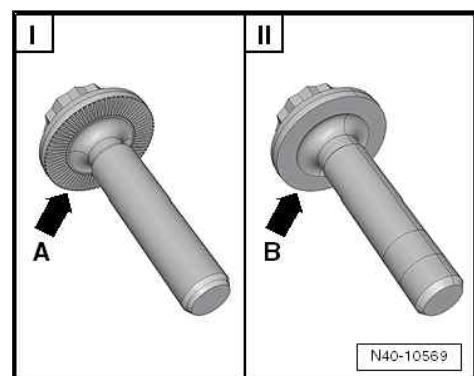
Distinguishing feature of twelve-sided bolts

The twelve-sided bolts differ in the surface area -arrow A- and -arrow B-.

- ◆ I - Twelve-sided bolt with serration - -arrow A-
- ◆ II - Twelve-sided bolt without serration - -arrow B-

Removing

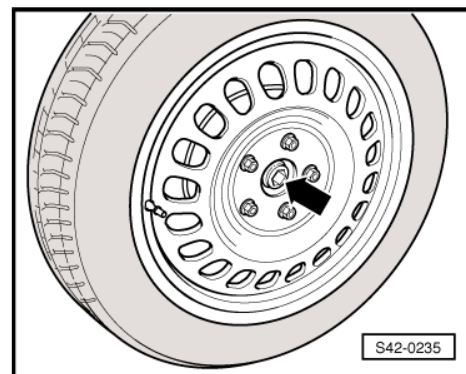
- Remove wheel trim cap, for light-alloy wheels remove the cap on the removed wheel (depending on version) ⇒ Wheels, Tyres; Rep. gr. 44 .
- Re-install light-alloy wheel (depending on the version) without cap.



- Slacken the screw -arrow- by max. 90° on the vehicle while it is standing on its wheels, otherwise the wheel bearing may be damaged.
- Raise the vehicle until the wheels are fully off the ground.
- Depress brake pedal (assistance of second mechanic required).
- Unscrew screw -arrow- and release brake pedal.

Installing

- Always install a new screw.



Note

- ◆ Assign screw via the ➔ *Electronic Catalogue of Original Parts*.
- ◆ *The wheels should not touch the ground when tightening the drive shaft screwed connection, otherwise the wheel bearing will be damaged.*

Twelve-sided screw - WHT 002 795- with serration

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 70 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 90°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

Twelve head screw - WHT 005 437- without teeth (black)

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 200 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 180°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

12-point screw - WHT 005 437 A- without teeth (silver)

- Depress brake pedal (assistance of second mechanic required).
- Tighten the twelve-sided bolt to 200 Nm.
- Place vehicle onto its wheels.
- Depress brake pedal (assistance of second mechanic required).
- Tighten the 12-point screw a further 90°.
- Install wheel trim cap, for light-alloy wheels (depending on version) install cap.

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Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

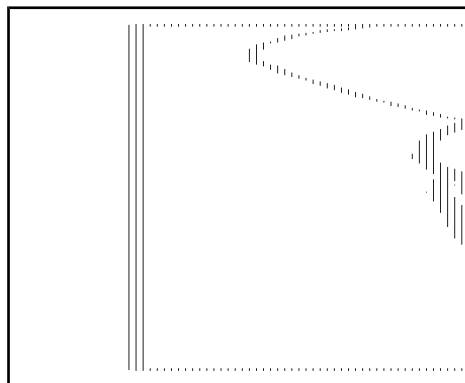
♦ ⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

6.6 Inspecting outer CV joint

Disassemble the joint to replace badly soiled grease or if the contact surfaces of the balls must be inspected for wear and damage.

Removing

- Before dismantling, mark position of ball hub in relation to ball cage and joint body with an electric scribe or oil stone.
- Rotate the ball hub and ball cage.
- Remove the balls one after the other.
- Turn cage until the two rectangular windows -arrow- lie on joint body.
- Remove cage with hub.



- Turn the hub segment in the rectangular window of the cage.
- Tilt hub out of the cage.

The 6 balls of each joint belong to a tolerance group. Inspect the axle studs, hub, cage and balls for small depressions (pitting = point erosion) and seizing marks. Excessive circumferential backlash in the joint is noticeable during a load change jolt. If this is the case, replace the joint. Smoothing and bearing marks do not justify a joint replacement.

Installing

- Pack half of total grease quantity (40 g) into joint body.
- Insert the cage and hub in the joint body.
- Press in opposite balls one after the other, during this process observe the prior position of the ball hub relatively to the ball cage and to the joint body.
- Insert new circlip in the groove of the shaft.
- Spread any residual grease in the joint boot.

6.7 Inspecting inner CV joint

Removing

The joint must be disassembled for the following work:

- ◆ replacing the grease in presence of major soiling
- ◆ checking the treads for wear
- ◆ checking the balls for wear
- Rotate the ball hub and ball cage.
- Press out joint part in -direction of arrow-.
- Press out the balls from the cage.



Note

The ball hub and joint piece are paired. These are not interchangeable.

- Tilt the ball hub out of the ball cage over the ball bearing track -arrows-.
- Inspect the joint part, ball hub, ball cage and balls for small broken out depressions (pitting = point corrosion) and seizing marks.

Excessive circumferential backlash in the joint is noticeable during a load change jolt. If this is the case, replace the joint. Smoothing and bearing marks do not justify a joint replacement.

Installing

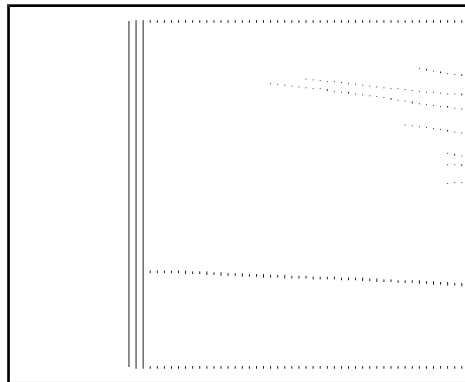
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- Insert the ball hub in the ball cage over the two chamfers. The fitting location is random. Press the balls into the cage.

The ball hub has 2 different distances between the ball bearing tracks, a larger and a smaller one.

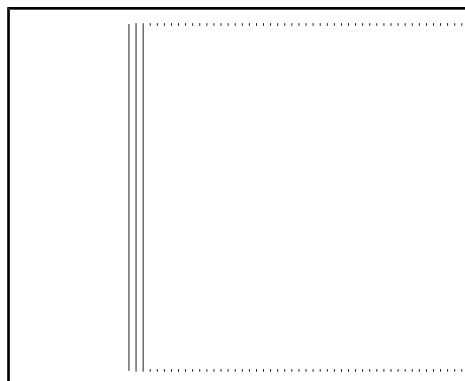
- Insert the hub with cage upright into the joint part.



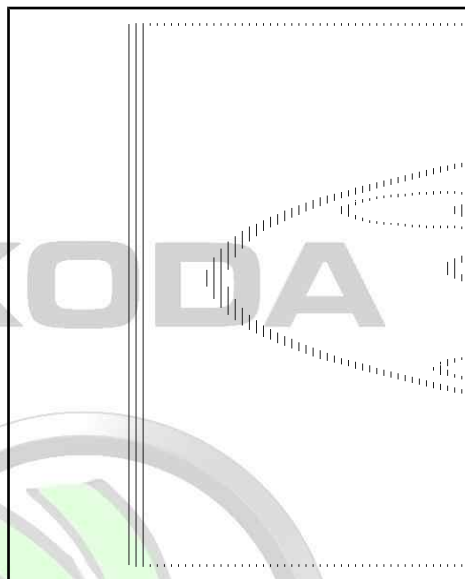
When inserting make sure the greatest distance -a- on the joint part is close to the short distance -b- on the hub after it has been swivelled in.

Chamfer on inner diameter of the ball hub (serration) must point towards the large diameter of the joint body.

- Also pay attention to the chamfer on the inner diameter of the ball hub. This must be visible after swivelling in.



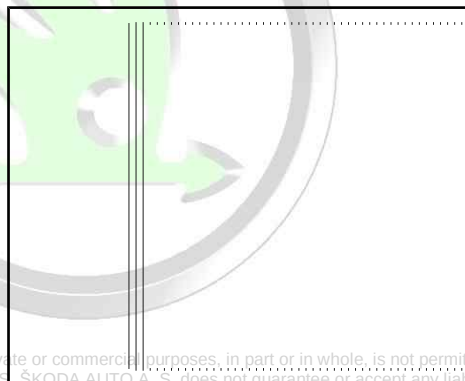
- Swivel in the ball hub, to do so swivel the hub out of the cage -arrows- until the balls are at bearing track distance.



- Lock the hub with the balls into position by exerting considerable pressure on the cage -arrow-.

Check proper operation of joint.

The CV joint is correctly assembled if the ball hub can be rolled by hand up and down the entire linear compensation.



43 – Self-levelling suspension

1 Vehicle level sensor

⇒ [“1.1 Summary of components - vehicle level sender front”, page 293](#)

⇒ [“1.2 Summary of components - vehicle level sender rear”, page 294](#)

⇒ [“1.3 Removing and installing front vehicle level encoder G78”, page 295](#)

⇒ [“1.4 Removing and installing vehicle level rear encoder G76”, page 296](#)

1.1 Summary of components - vehicle level sender front



Note

The front left vehicle level sensor - G78- is supplied complete with coupling rod and upper and lower retaining bracket as a spare part.

1 - Suspension link

2 - Assembly carrier

3 - Plug connection

4 - Front left side vehicle level sensor - G78-

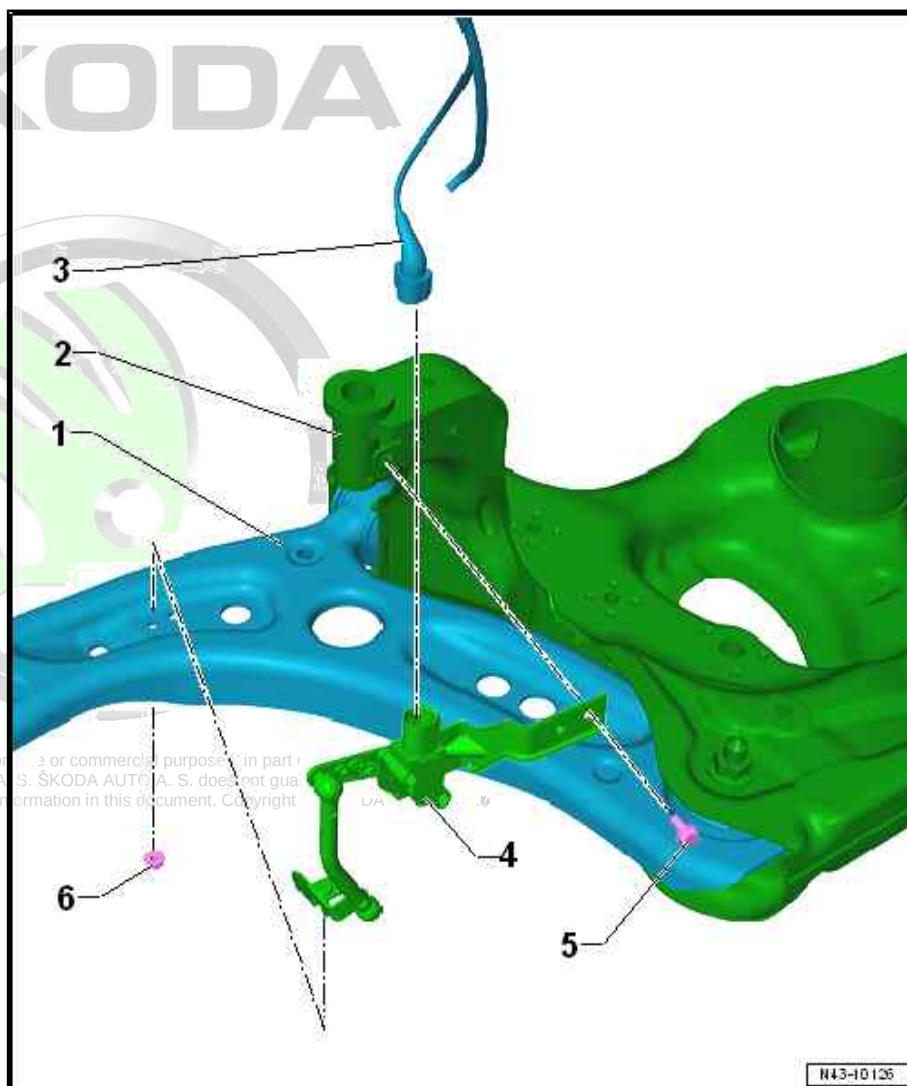
- ☐ complete with component parts
- ☐ The lever must point towards the outer side of the vehicle
- ☐ Removing and installing
⇒ [“1.3 Removing and installing front vehicle level encoder G78”, page 295](#)
- ☐ Carrying out a basic setting of the headlights
⇒ Maintenance ; Booklet Octavia II

5 - Screw

- ☐ 9 Nm

6 - Nut

- ☐ Replace after removal
- ☐ 9 Nm



N43-10125



1.2 Summary of components - vehicle level sender rear



Note

- ♦ The rear left vehicle level sensor - G76- is supplied complete with coupling rod and upper and lower retaining bracket as a spare part.
- ♦ Replace with installed assembly carrier
⇒ ["1.4 Removing and installing vehicle level rear encoder G76 ", page 296](#) .

1 - Assembly carrier

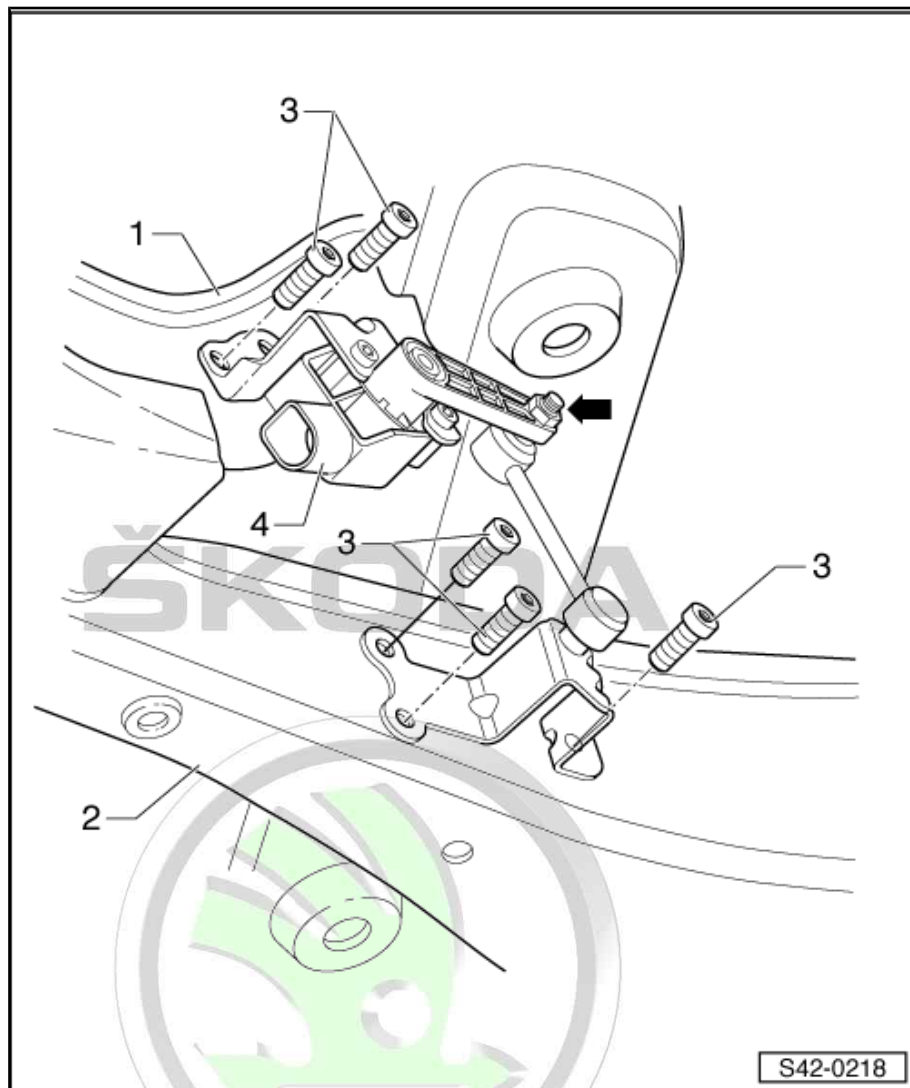
2 - Bottom suspension arm

3 - Screw

- 5 Nm

4 - Rear left vehicle level sensor - G76-

- complete with component parts
- Lever -arrow- must points towards the outer side of the vehicle
- replace in vehicle
⇒ ["1.4 Removing and installing vehicle level rear encoder G76 ", page 296](#)
- after replacing, carry out the basic setting of the headlight range control unit - J431- ⇒ Vehicle diagnostic tester in the function "Targeted fault finding".

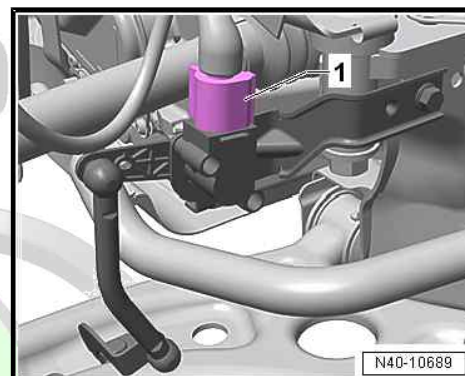


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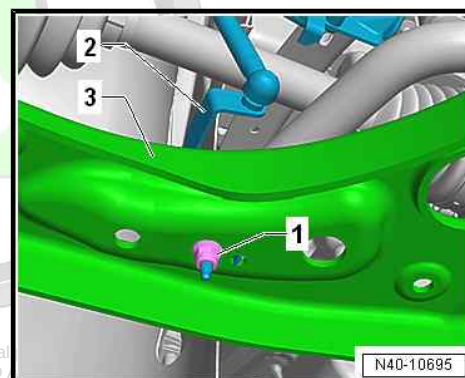
1.3 Removing and installing front vehicle level encoder -G78-

Removing

- Disconnect the connector -1- on the front left vehicle level sensor - G78- .



- Unscrew nut -1-.
- Remove the holder -2- of the front left vehicle level encoder - G78- from the wishbone -3-.



- Release screw -1-.
- Remove front left vehicle level sensor - G78- .

Installing

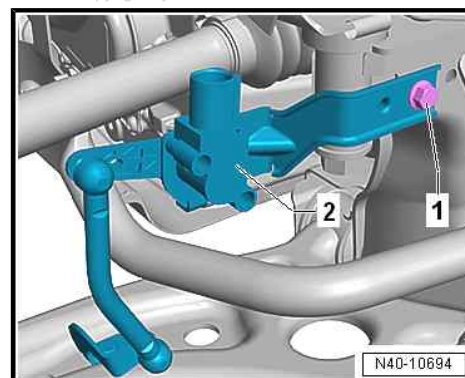
Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ *The lever of the vehicle level sender must point towards the outer side of the vehicle.*
- ◆ *The thread on the vehicle level sender must be screwed into the out bore hole of the suspension link. The retaining lug on the vehicle level sender must engage in the inner bore hole to ensure that the installation position is correct.*

- Carry out a basic setting of the headlights ⇒ Maintenance ; Booklet Octavia II .



Tightening torques

- ◆ ⇒ ["1.1 Summary of components - vehicle level sender front", page 293](#)



1.4 Removing and installing vehicle level rear encoder -G76-

Removing

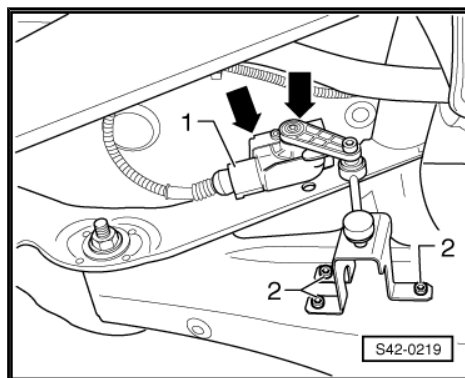
- Disconnect plug connection -1-.
- Unscrew screws -2- from bottom suspension arm.
- Unscrew support screws for sender housing -arrows-.
- Remove sensor.

Installing

Installation is carried out in the reverse order. Pay attention to the following:

The lever of the sensor must point towards the outer side of the vehicle.

- After replacing the rear left vehicle level sensor - G76- carry out the basic setting of the headlight range control unit - J431-
⇒ Vehicle diagnostic tester in the function "Targeted fault finding".



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ ["1.2 Summary of components - vehicle level sender rear", page 294](#)



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44 – Wheels, tyres, vehicle geometry

1 Wheels, Tyres

⇒ [“1.1 Wheel change”, page 297](#)

⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#)

⇒ [“1.3 Disposing of tyre sealant”, page 301](#)

⇒ [“1.4 Vehicles with breakdown set”, page 301](#)

1.1 Wheel change

⇒ [“1.1.1 Rotating wheels”, page 297](#)

⇒ [“1.1.2 Wheel change, protecting wheel centring seat against corrosion”, page 297](#)

⇒ [“1.1.3 Wheel replacement, assembly conditions”, page 298](#)

⇒ [“1.1.4 Wheel change, installation instructions for wheel change”, page 299](#)

⇒ [“1.1.5 Wheel change, wheel installation”, page 300](#)

⇒ [“1.1.6 Wheel change, position of anti-theft wheel bolts for steel wheels”, page 300](#)

1.1.1 Rotating wheels

Vehicles with front-wheel drive exhibit more tread wear on the front wheels due to the greater forces they have to transmit.

In order for all 4 wheels on the vehicle to have the same service life, we recommend rotating the front and rear wheels and tyres.

Ensure that unidirectional tyres are not reversed.

The longer the tyre runs at one position, the more it wears at certain points. Therefore it is recommended to rotate the wheels at short intervals, for example every 5,000 km.

Diagonal rotation is possible only with non-directional tyres. This method of wheel rotation is especially advantageous in the case of saw-tooth wear.

If saw-tooth wear has already progressed and the tread is worn to more than 50%, only slight improvements would be achieved and rotation is not recommended. The elasticity of the tread blocks declines and the saw-tooth wear does not progress.

1.1.2 Wheel change, protecting wheel centring seat against corrosion

Valid for light alloy and steel wheels

When a wheel is installed, the wheel centring seat should be waxed with wax spray - D 322 000 A2- to prevent corrosion between the wheel centring seat and the wheel rim ⇒ Electronic Catalogue of Original Parts .

- Remove wheel.
- Clean wheel centring seat of hub and centring ring of wheel rim.

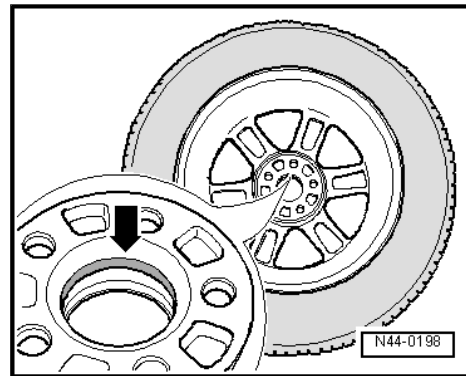


- Apply wax to centring ring -arrow-.



Note

- ♦ *Ensure that only centring ring -arrow- but not contact surface of wheel rim has been waxed. Otherwise, the brakes will be soiled, which would reduce the braking efficiency.*
 - ♦ *Wheel bolts, contact surfaces of wheel hub and wheel rim and wheel hub threads must not be waxed. Never treat wheel securing bolts with lubricant or corrosion protection materials!*
- Installing and tightening the wheel
⇒ [“1.2 Tightening torque of the wheel screws”, page 301](#) .



1.1.3 Wheel replacement, assembly conditions

Warming cold tyres to minimum installation temperature



Note

- ♦ *This instruction also applies to ultra-high performance tyres (height/width ratio smaller than/same as 45 % and speed symbol greater than/same as V).*
 - ♦ *The minimum installation temperature of a tyre should be between 15 °C and 30 °C in the core of the tyre.*
- To install tyres without damage, it is especially important to warm the upper part of the sidewall and the inside of the upper bead to at least 15 °C.
 - This internal temperature is referred to as the core temperature.
 - Rubber is a poor conductor of heat. Therefore, a cold tyre must be left in an area with the correct temperature for a sufficiently long period so the inner rubber layers can warm up to at least 15 °C.
 - The surface temperature of the tyre in the warm-up phase is not an indication of the temperature on the inside of the tyre.
 - To prevent cold tyres from rapidly absorbing heat from the ambient air, do not stack them up. Position them individually so that warm air can “circulate around” them effectively.
 - Tyres must never be placed in front of a radiator or hot air blower for warming, since this can very quickly lead to critical surface temperatures.
 - Tyres can only be heated up without damaging the tyre with warm water or warm air (maximum 50 °C)!
 - When cold tyres (below 0 °C) are transferred to a warm environment (above 0 °C), a layer of condensation immediately forms on the surface of the tyre. This layer of condensation indicates that the tyre is intensively absorbing heat from its environment through the process of water vapour in the air condensing out on the tyre surface.
 - Condensation will form if the surface of the tyre thaws. This should be dried with a cloth so that the further warming process is not delayed due to a temperature drop caused by evaporation.

Warm-up times

- ◆ Tyres with a temperature of above 0 °C must be stored on at least 19 °C for at least 2 hours.
- ◆ Tyres with a temperature below 0 °C must be stored on at least 19 °C for at least 2.5 hours.

Warm-up recommendations

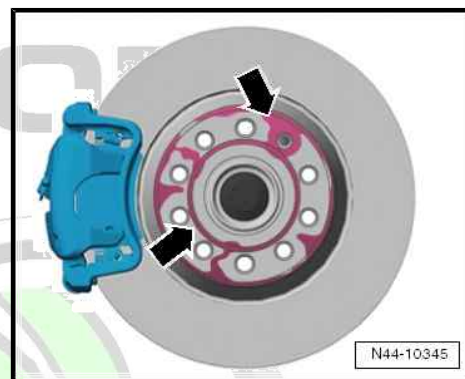
- ◆ If possible, tyres should be stored in the workshop 1 day before they are fitted (order preparation)
- ◆ Store on an insulated base, pallet or the like, high up.
- ◆ Position the tyres individually to allow the warm air to “circulate around” them effectively
- ◆ Wipe off condensation
- ◆ Never heat with a radiator or hot air blower!

1.1.4 Wheel change, installation instructions for wheel change

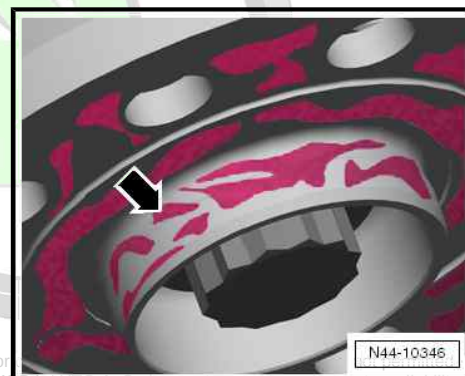


Note

- ◆ *Perform the checks and follow the instructions listed below. This is important to ensure that the wheel bolts and the wheels are properly secured.*
 - ◆ *On vehicles with a tyre control indication, after one or more wheels are removed or installed, the tyre check display must be re-calibrated ⇒ Owner's Manual .*
- Check to ensure that contact surfaces -arrows- on brake disc are free of corrosion and dirt.



- Check to ensure that contact surface -arrow- on centring seat of brake disc are free of corrosion and dirt.

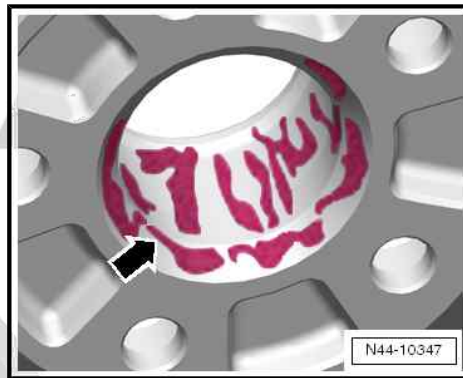


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- Check to ensure that contact surface -arrow- on inner side of wheel (rim) and also centring seat of rim are free of corrosion and dirt.
- The concave seats * in the holes for the wheel bolts and the threads of the wheel bolts must also be free of corrosion and dirt, oil or grease.

* The concave seat is the curved surface of a section of a sphere cut by a plane.

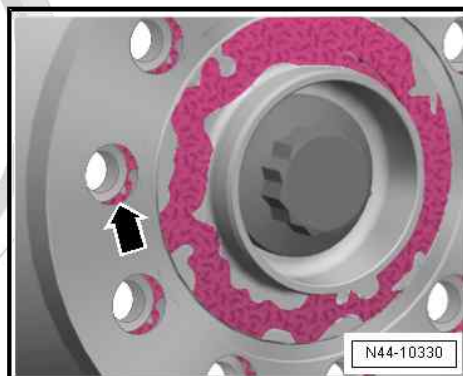


- Check whether the wheel bolts can be easily screwed in by hand. The thread of the wheel bolts must not come into contact with the bore in the brake disc -arrow-.

If the thread of the wheel bolt touches the hole -arrow-, the brake disc must be turned relative to the wheel hub accordingly.

If necessary, remove dirt and corrosion:

- ♦ Oil or grease from contact surfaces
- ♦ Oil or grease from the threads in the wheel hub
- ♦ Oil or grease from the threads of the wheel bolts



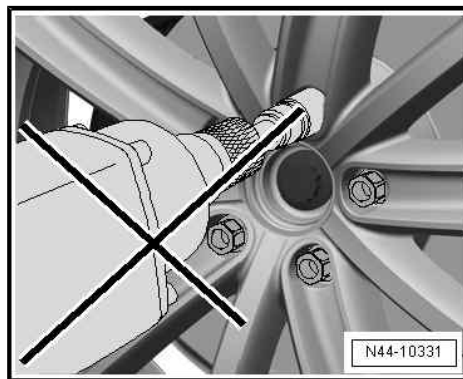
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Damaged, badly corroded or difficult to remove wheel bolts must be renewed.

1.1.5 Wheel change, wheel installation

- Keep the wheel centring seat
⇒ "1.1.2 Wheel change, protecting wheel centring seat against corrosion", page 297.
- 1 - When fitting the wheel, screw in all wheel bolts uniformly by hand.
- 2 - Tighten the wheel bolts in diagonal sequence to approx. 30 Nm.
- 3 - Drain the vehicle on the floor. Tighten all wheel bolts cross-wise to specified tightening torque using a torque wrench!
⇒ "1.2 Tightening torque of the wheel screws", page 301.



Note

Do not use an impact screwdriver for screwing in the wheel bolts!

1.1.6 Wheel change, position of anti-theft wheel bolts for steel wheels

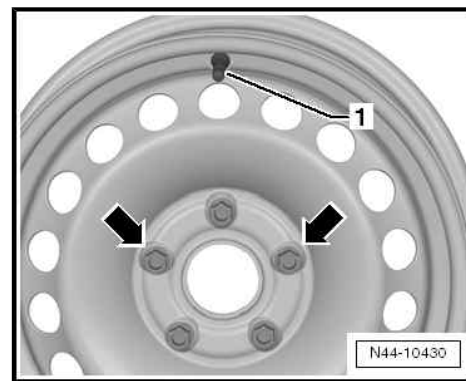


Note

Adherence to position of anti-theft wheel bolts to tyre valve on steel wheels is vital.

The anti-theft wheel bolt may only be installed on the right or left -arrows- of valve -1- on steel wheels.

Secure installation of hub cap on steel wheel is only possible if anti-theft wheel bolts are installed in this position.



1.2 Tightening torque of the wheel screws

Wheel bolt to wheel hub for all vehicles:

Tightening torque: 120 Nm

- Before assembling the wheel, protect the wheel centring seat from corrosion
⇒ [“1.1.2 Wheel change, protecting wheel centring seat against corrosion”, page 297](#).
- ◆ Positioning of anti-theft wheel bolts on steel wheels
⇒ [“1.1.6 Wheel change, position of anti-theft wheel bolts for steel wheels”, page 300](#).
- ◆ Fit the anti-theft wheel bolts with master set for wheel bolts.

1.3 Disposing of tyre sealant

- ◆ Tyre sealant or residues should not be mixed with other wastes / fluids.
- ◆ Excess tyre sealant must be collected and stored in a plastic container. The plastic container can be disposed of through the disposal system along with the breakdown set (when the expiry date is exceeded).
- ◆ The items can be returned or disposed of through the existing workshop disposal systems.
- ◆ Make contact with your service provider or the waste officer at the sales centre/importer.

1.4 Vehicles with breakdown set

Depending on the scope of equipment, some vehicles are fitted with a breakdown set.

The breakdown set can be found in the spare wheel well.

The breakdown set contains a bottle with tyre sealant -2- and a compressor -1-.

The tyre sealant in the bottle is perishable.

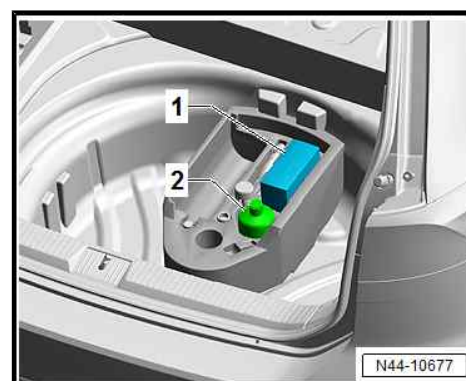
The bottle -1- therefore has an expiry date -arrow-.

Renew tyre sealant when the expiry date is reached (the tyre sealant must not be older than 4 years).

If the bottle was opened, e.g. when having a flat tyre, it must also be replaced.

Observe regulations for disposal

⇒ [“1.3 Disposing of tyre sealant”, page 301](#).





2 Chassis - Specified values of steering geometry

⇒ [“2.1 Front axle - Specified values of steering geometry”, page 302](#)

⇒ [“2.2 Rear axle - Specified values of steering geometry”, page 304](#)

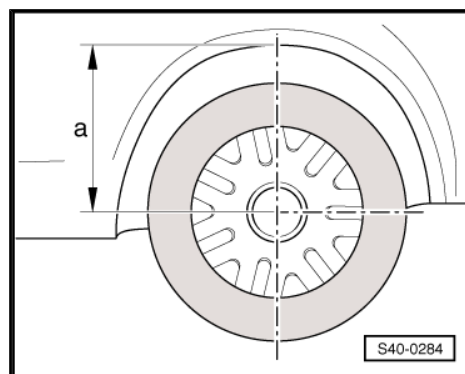
⇒ [“2.3 Vehicle data sticker and PR numbers”, page 304](#)

2.1 Front axle - Specified values of steering geometry

The stationary heights specified in the table apply for the dimension -a-.

Before the axle alignment and the adjustment of the steering geometry, lock the steering wheel in the middle position of the height adjustment of steering wheel.

- ◆ Technical data apply for the unladen weight of the vehicle ready for driving - full fuel tank and washer fluid/headlight cleaning system reservoir, spare wheel and jack (if the vehicle was fitted at the factory with them), tool kit and without driver). The spare wheel, tool kit and jack must be located in the position prescribed by the vehicle manufacturer.



Note

If the corresponding unladen weight cannot be achieved (e.g. a vehicle with a breakdown set or a vehicle with a fuel tank which is not completely full), the vehicle load must be set as follows:

- Load the vehicle with a corresponding weight.
- Determine the fuel volume in the fuel tank on the fuel gauge display.
- Place a weight above the fuel tank according to the following table:

Fuel gauge	Weight (kg)
Reserve	37
1/4	33
1/2	22
3/4	11
Fuel tank full	0



Note

- ◆ *Use as weight e.g. plastic tanks filled with water or canisters. 1 litre of water = 1 kg.*
- ◆ *When fitting the weight onto the rear seat pay special attention so that the seat upholsteries are not dirty or damaged.*

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Front axle	Basic chassis	Sport chassis RS	Rough road chassis
PR numbers ⇒ "2.3 Vehicle data sticker and PR numbers", page 304	2UA	2UC	2UB
Overall track (not depressed)	10' ± 10'	10' ± 10'	10' ± 10'
Toe difference angle on turns of 20° of inside wheel -not adjustable-	1° 38' ± 20'	1° 40' ± 20'	1° 20' ± 20'
Max. wheel lock angle -not adjustable-	40° 40'	40° 10'	40° 57'
Camber (in straightahead position) Maximum permissible difference between the two sides	-30' ± 30' max. 30	-41' ± 30' max. 30	-8' ± 30' max. 30
Castor Maximum permissible difference between the two sides	7° 34' ± 30' max. 30	7° 47' ± 30' max. 30	7° 14' ± 30' max. 30

The specified values for all types of engines with front and four-wheel drive or the RS version are valid according to the relevant chassis PR numbers

⇒ "2.3 Vehicle data sticker and PR numbers", page 304 .

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Stationary height -a-

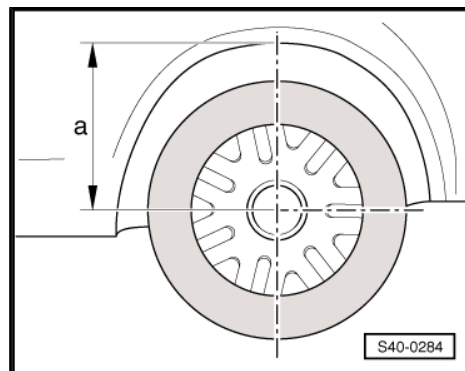
Chassis	Combinations of PR numbers	Stationary height -a- (mm)
Basic chassis 2UA	to 05.05	all combinations of PR numbers
	from 06.05	G07+L06
		G07+L19
		other combinations of PR numbers
Sport chassis 2UC	to 05.05	all combinations of PR numbers
	from 06.05	G02+L03
		G07+L10
		other combinations of PR numbers
Rough road suspension 2UB	all combinations of PR numbers	416' ± 10'

The specified values for all types of engines with front and four-wheel drive or the RS version are valid according to the relevant chassis PR numbers

⇒ "2.3 Vehicle data sticker and PR numbers", page 304 .

2.2 Rear axle - Specified values of steering geometry

The stationary heights specified in the table apply for the dimension -a-.



- ◆ Technical data applies to the unladen weight of the vehicle ready for driving (full fuel tank and reservoir for the washer fluid reservoir and headlight washer system, spare wheel, tool kit, jack and without driver).

Rear axle front and four-wheel drive	Basic chassis	Sport chassis	RS	Rough road chassis
PR numbers ⇒ "2.3 Vehicle data sticker and PR numbers", page 304	2UA	2UC	2UC	2UB
Overall track (for specified camber)	The allocation of the adjusting values to the relevant running gear occurs via the PR No. of the front axle damping			
Maximum permissible deviation from the running direction	+10' ± 10'	+10' ± 10'	+10' ± 10'	+10' ± 10'
Camber	-1° 45' ± 30' ¹⁾ until 01/2005 -1° 20' ± 30' as of 02.2005	-1° 45' ± 30' ¹⁾ until 01/2005 -1° 20' ± 30' as of 02.2005	-1° 45' ± 30'	-1° 45' ± 30' ¹⁾ until 01/2005 -1° 20' ± 30' as of 02.2005
Maximum permissible difference between the two sides	max. 30	max. 30	max. 30	max. 30
Stationary height -a- in mm:	398 ± 10 ²⁾ 394 ± 10 ³⁾	386 ± 10 ²⁾ 380 ± 10 ³⁾	380' ± 10'	419' ± 10'

The specified values for all types of engines with front and four-wheel drive or the RS version are valid according to the relevant chassis PR numbers

⇒ "2.3 Vehicle data sticker and PR numbers", page 304 .

- 1) The value -1°20' ± 30' can be used for vehicles as of 02.2005.
- 2) The values are valid up to 12.2005.
- 3) The values are valid as of 01.2006.

2.3 Vehicle data sticker and PR numbers

Chassis, spring system and damping are identified by PR numbers.

The type of chassis is identified by a chassis PR number on the vehicle data sticker -3-.

The springs of the vehicle are identified by a PR number -2- on the vehicle data sticker.

The damping of the vehicle is identified by a PR number on the vehicle data sticker -3-.

Example of a vehicle data sticker

1 - L02 - Spring system

2 - G02 - Damping

3 - 2UA - Chassis

The PR numbers are required to determine the nominal values for the vehicle.

The vehicle data sticker is located on the luggage compartment floor and in the Service Schedule.

FAHRZEIG - IDENT. NR. VEHICLE - IDENT. NO.	33-1-3310	02241 SX
TYP / TYPE	1Z	7 48000302
	1Z3 3G4	ZD
OCTAVIA	75KW SH	ELEG
MOTORKEL. / BETRIEBL. ENG. CODE / TRANS. CODE	BGU	FV1
LACKNR. / INNENAUSST. PAINT NO. / INTERIOR	9102	ZD
M. - AUSST. / OPTIONS		
E0A 1D2 SSL 5RQ 1KF 6FJ 1AC 3FE		
1N3 1NL HH7 4UF 4R4 303 3GT 4X		
4A3 BL3 J1D 7AL 5AU 6Y0 9AK 5VJ		
7G0 8YM 8QK 8X 4K3 B03 G02 GN2		
3L3 9P1 42 9WS BWB 7AO 3GA		
OG1 OGG L02 7P4 FOA		2UA



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3 Axle alignment

⇒ ["3.1 General points", page 306](#)

⇒ ["3.2 Measurement preliminaries", page 307](#)

⇒ ["3.3 Axle alignment", page 309](#)

⇒ ["3.4 Overview of the work sequence for the axle alignment", page 311](#)

⇒ ["3.5 Check transversal inclination of the vehicle straight-ahead position", page 312](#)

⇒ ["3.6 Adjusting camber at front wheels", page 312](#)

⇒ ["3.7 Adjust the camber on the rear axle", page 315](#)

⇒ ["3.8 Adjust the track on the front axle", page 317](#)

⇒ ["3.9 Adjust the track on the rear axle", page 318](#)

⇒ ["3.10 Check position of steering wheel, align if necessary", page 318](#)

3.1 General points

The vehicle must only be aligned using an alignment gauge released by the manufacturer.

Before the axle alignment and the adjustment of the steering geometry, lock the steering wheel in the middle position of the height adjustment of steering wheel.

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You should align both the front and rear axles during each axle alignment procedure.

Otherwise correct vehicle driving behaviour cannot be guaranteed!



Note

- ◆ *Only perform the appropriate axle alignment after 1 000 to 2 000 km to allow the rubber-metal bearings, the coil springs and other axle components to fully settle.*
- ◆ *One cause of vibration in the vehicle can be a residual unbalance which is too high and/or off-centre runout of the wheels.*
- ◆ *During adjustment work try to approximate the nominal values.*

If the fitting position of the rear axle and hence the running direction of the vehicle are not considered this could result in a skewed steering wheel.



Caution

On vehicles with the ESP system, the steering wheel must not be offset, except when a new steering column is installed.

The steering wheel position is defined by stamped lines on the steering wheel as well as on the steering column ➔ Body Work; Rep. gr. 69 .

This position must not be changed! Otherwise the central position of the gear rack cannot be guaranteed!

Mark the opposite position of the steering wheel and shaft with a line, as long as this position is not factory-marked.

Steering columns supplied as spare parts do not have dotting marks. These steering columns must be marked after the axle alignment and a subsequent test drive.

*A skewed steering wheel must be corrected in the straight-ahead position by adjusting the lengths of the track rods ➔ **"3.8 Adjust the track on the front axle", page 317** .*

If the steering wheel is offset, the null balance of the steering angle sender - G85- must always be carried out with the diagnostic unit - VAS- ➔ Vehicle diagnostic tester.

3.2 Measurement preliminaries

- Determine the chassis version according to the vehicle data sticker
➔ **"2.3 Vehicle data sticker and PR numbers", page 304** .
- Check the wheel suspension, wheel bearing of the vehicle, steering and steering linkage for impermissible play and damage, if necessary repair.
- Before the axle alignment and the adjustment of the steering geometry, lock the steering wheel in the middle position of the height adjustment of steering wheel.
- Check rim runout compensation (compensation). Otherwise the measuring result is inaccurate and a correct toe-in adjustment is not possible!
- Tyres pumped up to nominal value ➔ Maintenance ; Booklet Octavia II or label on the fuel-tank cap.
- The tyre tread depth on an axle must have a difference of maximum 2 mm.
- The vehicle has an unladen weight.
- Fuel tank must be full ➔ **page 308** .
- Spare wheel and tool kit at corresponding fitting location of the vehicle.
- The reservoir for the washer fluid reservoir must be full.
- Vehicle must be aligned perfectly, with the springs having been repeatedly deflected and having returned to their original position.
- Make sure that during alignment no sliding base and no rotating plate touch the limit stop.

Unladen weight:

Technical data apply for the unladen weight of the vehicle ready for driving - full fuel tank and washer fluid/headlight cleaning system reservoir, spare wheel and jack (if the vehicle was fitted at the factory with them), tool kit and without driver). The spare



wheel, tool kit and jack must be located in the position prescribed by the vehicle manufacturer.



Note

If the corresponding unladen weight cannot be achieved (e.g. a vehicle with a breakdown set or a vehicle with a fuel tank which is not completely full), the vehicle load must be set as follows:

- Load the vehicle with a corresponding weight.
- Determine the fuel volume in the fuel tank on the fuel gauge display.
- Place a weight above the fuel tank according to the following table:

Fuel gauge	Weight (kg)
Reserve	37
1/4	33
1/2	22
3/4	11
Fuel tank full	0



Note

- ♦ *Use as weight e.g. plastic tanks filled with water or canisters. 1 litre of water = 1 kg.*
- ♦ *When fitting the weight onto the rear seat pay special attention so that the seat upholsteries are not dirty or damaged.*



WARNING

- ***The measuring device must be positioned and adjusted in compliance with the specifications; observe the manufacturer's instructions!***

If necessary obtain information on your alignment gauge from the manufacturer.

In the course of time the alignment platform and alignment gauge/alignment computer may deviate from their original adjustment/setting.

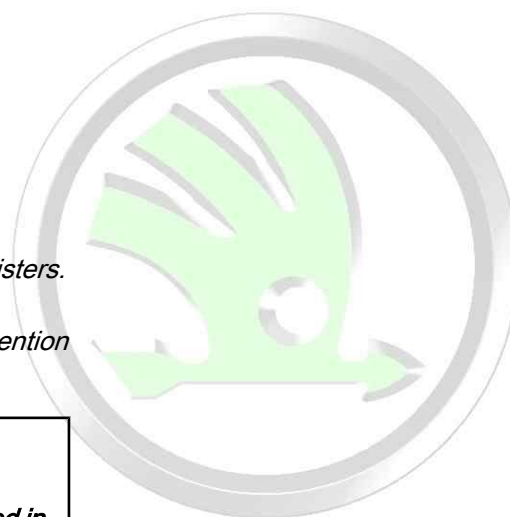
Alignment platform and alignment gauge/alignment computer should be inspected at least once a year within the scope of servicing and if necessary adjusted!

Handle these highly sensitive devices carefully and conscientiously.

To this end comply with the instructions of the alignment gauge manufacturer.

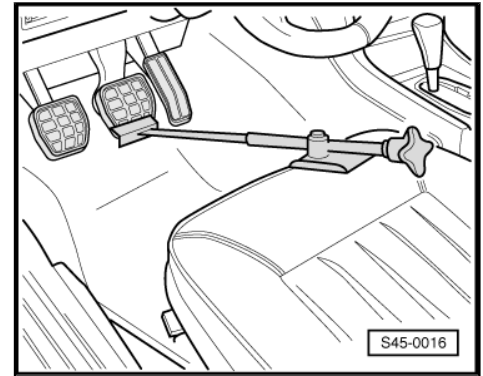
- Perform a rim runout compensation.

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- Brake pedal load e.g. -V.A.G 1869/2 -
- Secure the brake pedal with the brake pedal load.



3.3 Axle alignment

It is necessary to perform an axle alignment in the event of:

- ◆ incorrect driving behaviour.
- ◆ damage caused by accident and if parts have been replaced
⇒ [page 309](#)
- ◆ Components were removed ⇒ [page 309](#)
- ◆ Tyres wear on one side.

Vehicles with aluminium assembly carrier

Replace components

Front axle:	Chassis alignment required		Rear axle:	Chassis alignment required	
Component replaced	Yes	No	Component replaced	Yes	No
Suspension link		X ¹⁾	Bottom suspension arm	X	
Rubber-metal bearing for track control arm		X ¹⁾	Top suspension arm	X	
Wheel bearing housing	X		Track rod for rear axle	X	
Track rod/track-rod ends	X		Wheel bearing housing	X	
Steering gear	X		Assembly carrier	X	
Assembly carrier		X ¹⁾	Coil spring		X
Suspension strut		X	Shock absorber		X
Console for engine-gear-box assembly carrier	X		Anti-roll bar		X
Anti-roll bar		X ¹⁾	Trailing arm	X	

¹⁾ Precondition: The aluminium assembly carrier and consoles were fixed before removal
⇒ [“2.2 Fixing the assembly carrier and the console, aluminium assembly carrier”, page 14](#).

Vehicles with aluminium assembly carrier:

Removing and installing part of the axle

Front axle:	Chassis alignment required		Rear axle:	Chassis alignment required	
Part of the axle removed and installed	Yes	No	Part of the axle removed and installed	Yes	No
Suspension link		X ¹⁾	Bottom suspension arm	X	
Wheel bearing housing		X	Top suspension arm	X	
Track rod/track-rod ends	X		Track rod for rear axle	X	



Front axle:	Chassis alignment required		Rear axle:	Chassis alignment required	
Part of the axle removed and installed	Yes	No	Part of the axle removed and installed	Yes	No
Steering gear	X		Wheel bearing housing	X	
Assembly carrier		X ¹⁾	Assembly carrier	X	
Suspension strut		X	Coil spring		X
Console for engine-gear-box assembly carrier		X ¹⁾	Shock absorber		X
Anti-roll bar		X ¹⁾	Anti-roll bar		X
			Trailing arm	X	

¹⁾ Precondition: The aluminium assembly carrier and consoles were fixed before removal

⇒ ["2.2 Fixing the assembly carrier and the console, aluminium assembly carrier", page 14](#) .

Vehicles with assembly carrier made of steel sheet:

Components replaced:

Front axle:	Chassis alignment required		Rear axle:	Chassis alignment required	
Component replaced	Yes	No	Component replaced	Yes	No
Suspension link		X	Bottom suspension arm	X	
Rubber-metal bearing for track control arm		X ²⁾	Top suspension arm	X	
Wheel bearing housing	X		Track rod for rear axle	X	
Track rod/track-rod ends	X		Wheel bearing housing	X	
Steering gear	X		Assembly carrier	X	
Assembly carrier made of steel sheet	X		Coil spring		X
Suspension strut		X	Shock absorber		X
Anti-roll bar		X ²⁾	Anti-roll bar		X
			Trailing arm	X	

²⁾ Precondition: the assembly carrier made of steel sheet was fixed before removal

⇒ ["3.2 Fixing the assembly carrier, assembly carrier made of steel sheet", page 64](#) .

Vehicles with assembly carrier made of steel sheet:

Removing and installing part of the axle:

Front axle:	Chassis alignment required		Rear axle:	Chassis alignment required	
Part of the axle removed and installed	Yes	No	Part of the axle removed and installed	Yes	No
Suspension link		X	Bottom suspension arm	X	
Wheel bearing housing		X	Top suspension arm	X	
Track rod/track-rod ends	X		Track rod for rear axle	X	
Steering gear	X		Wheel bearing housing	X	
Assembly carrier made of steel sheet		X ²⁾	Assembly carrier	X	

Front axle:	Chassis alignment re- quired		Rear axle:	Chassis alignment re- quired	
Part of the axle removed and installed	Yes	No	Part of the axle removed and installed	Yes	No
Suspension strut		X	Coil spring		X
Anti-roll bar		X ²⁾	Shock absorber		X
			Anti-roll bar		X
			Trailing arm	X	

2) Precondition: the assembly carrier made of steel sheet was fixed before removal
⇒ [“3.2 Fixing the assembly carrier, assembly carrier made of steel sheet”, page 64](#) .

3.4 Overview of the work sequence for the axle alignment

The following sequence of work steps must always be respected!

- 1 - Determine what chassis has been mounted in the vehicle.
This information can be found on the vehicle data sticker
⇒ [“2.3 Vehicle data sticker and PR numbers”, page 304](#) .
- 2 - Perform a rim runout compensation.
- 3 - Deflect the vehicle.
- 4 - Position brake pedal load , e.g. -V.A.G 1869/2- .
- 5 - Measure vehicle height
⇒ [“3.5 Check transversal inclination of the vehicle straight-ahead position”, page 312](#) .
- 6 - Before the axle alignment and the adjustment of the steering geometry, lock the steering wheel in the middle position of the height adjustment of steering wheel.
- 7 - Set the centre position of the gear rack at the steering wheel and fix the steering wheel (an even clearance circle to both sides is assured by means of the centre position of the gear rack). If the steering wheel is off straight, it must be positioned straight at the end of the chassis alignment.
- 8 - Check camber on front axle, if necessary adjust
⇒ [“3.6 Adjusting camber at front wheels”, page 312](#) .
- 9 - Check camber on rear axle, if necessary adjust
⇒ [“3.7 Adjust the camber on the rear axle”, page 315](#) .
- 10 - Check toe on rear axle, if necessary adjust
⇒ [“3.9 Adjust the track on the rear axle”, page 318](#) .
- 11 - Check the castor on the front axle.
- 12 - Check the toe on the front axle, if necessary adjust
⇒ [“3.8 Adjust the track on the front axle”, page 317](#) .

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The following always applies! Always check the transversal inclination of the vehicle before adjustment if one of the measuring values is outside the tolerance.

3.5 Check transversal inclination of the vehicle "straight-ahead position"

It is possible the vehicle is skew if the measured values lie outside the tolerance.

RHD vehicles or e. g. vehicles with an automatic gearbox may be slightly skew.

This is normal and is due to the fitting location of the assemblies and the related transfer of weight.

- Check absolutely the left and right dimension -a- on the front and rear axle.

Dimension -a-:

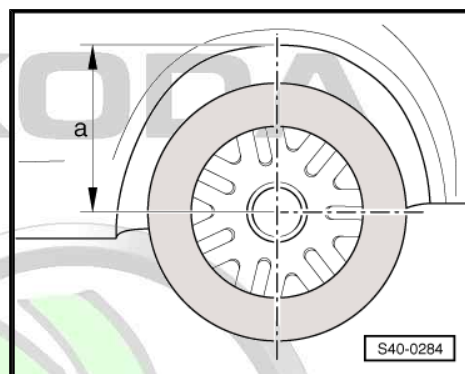
⇒ ["2 Chassis - Specified values of steering geometry", page 302](#).

- Correct possible deviations of nominal value.

Balance the difference on the front axle by placing weights on the relevant suspension strut dome in the engine compartment.

Balance the difference on the rear axle by placing weights in the luggage compartment on the relevant side.

Suitable weights are e.g. sand bags approx. 10 kg.



3.6 Adjusting camber at front wheels

⇒ ["3.6.1 Adjust the camber on the front axle, aluminium assembly carrier", page 312](#)

⇒ ["3.6.2 Adjusting the camber on the front axle - assembly carrier made of steel sheet", page 314](#)

3.6.1 Adjust the camber on the front axle, aluminium assembly carrier

Move assembly carrier (looking in direction of travel) only to the left or right, never to the front or to the rear!

- Remove the noise insulation.
- Release screws -1- for the console attachment/assembly carrier to the body on both sides.
- Only the specified value for the camber can be set by moving the assembly carrier -2- with the consoles.



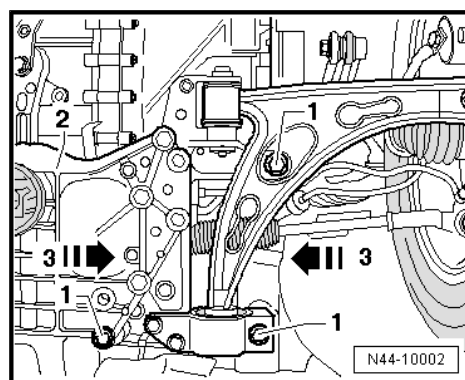
Note

Assembly carrier should only be moved to the left or right, on no account in the direction of travel or opposite the direction of travel.

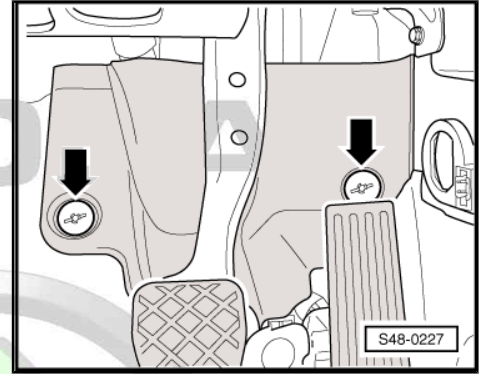
- Screw the assembly carrier and the consoles with new bolts to the body and tighten with the torquing angle.

After moving the assembly carrier and also the steering gear, the clearance between the universal joint of the steering column and the cutout of the bulkhead plenum chamber must be checked.

Left-hand drive

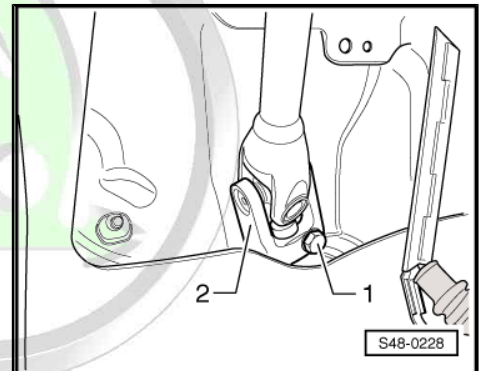


- Remove nuts -arrows- and remove the footwell trim.

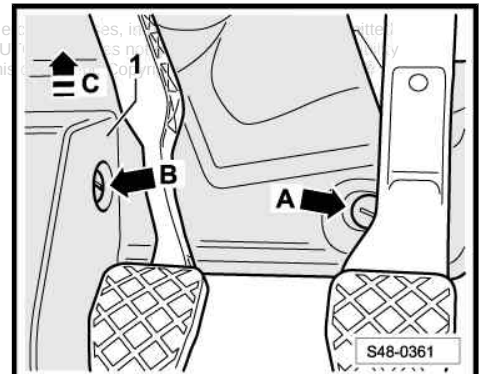


Now there must be at least a circular clearance of 5 mm between the universal joint -2- and the cutout of the bulkhead plenum chamber.

Right-hand drive



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.



Now there must be at least a circular clearance of 5 mm between the universal joint -2- and the cutout of the bulkhead plenum chamber.

Continued for all vehicles

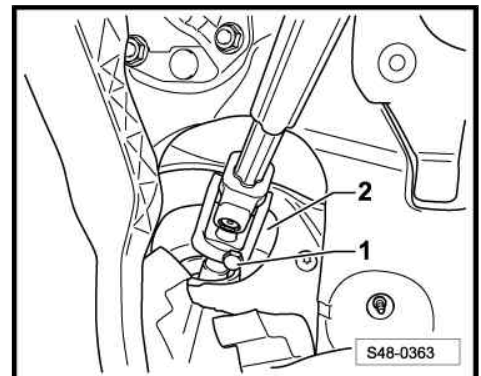
Installation is carried out in the reverse order.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.



◆ ⇒ [“2.1 Assembly overview - subframe, aluminium subframe”, page 10](#)

◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50



3.6.2 Adjusting the camber on the front axle - assembly carrier made of steel sheet

Move assembly carrier (looking in direction of travel) only to the left or right, never to the front or to the rear!

- Remove the noise insulation.
- Successively slacken the fixing screws -1-, -2- and -3- of the assembly carrier/body.
- Push the assembly carrier -4- until the specified value for the camber is achieved
⇒ ["2.1 Front axle - Specified values of steering geometry", page 302](#).



Note

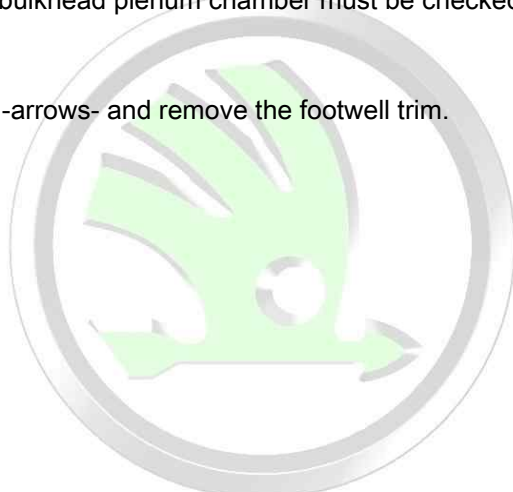
Assembly carrier should only be moved to the left or right, on no account in the direction of travel or opposite the direction of travel.

- Screw the assembly carrier with new screws to the body and tighten to the torquing angle
⇒ ["3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive", page 62](#).

After moving the assembly carrier and also the steering gear, the clearance between the universal joint of the steering column and the cutout of the bulkhead plenum chamber must be checked.

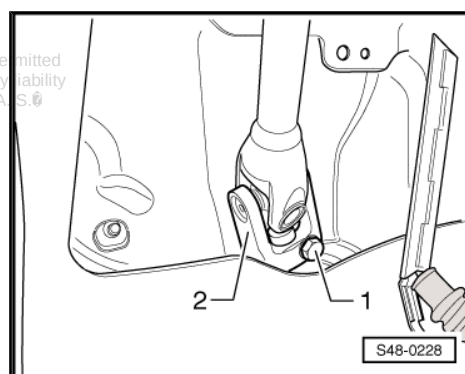
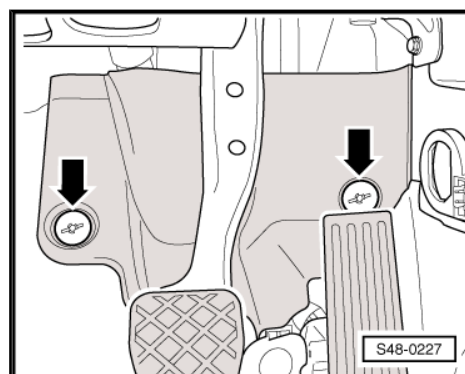
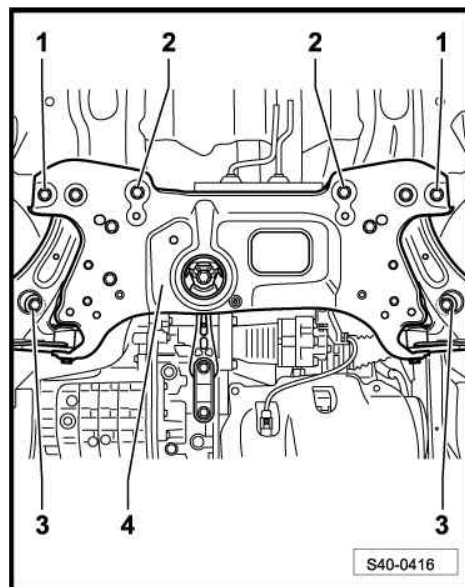
Left-hand drive

- Remove nuts -arrows- and remove the footwell trim.

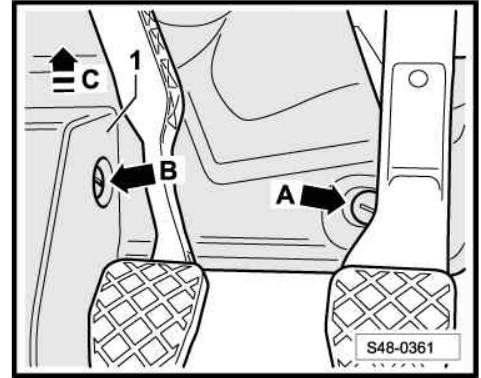


Now there must be at least a circular clearance of 5 mm between the universal joint -2- and the cutout of the bulkhead plenum chamber.

Right-hand drive



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip footwell panelling in -arrow direction C-.



Now there must be at least a circular clearance of 5 mm between the universal joint -2- and the cutout of the bulkhead plenum chamber.

Continued for all vehicles

Installation is carried out in the reverse order.

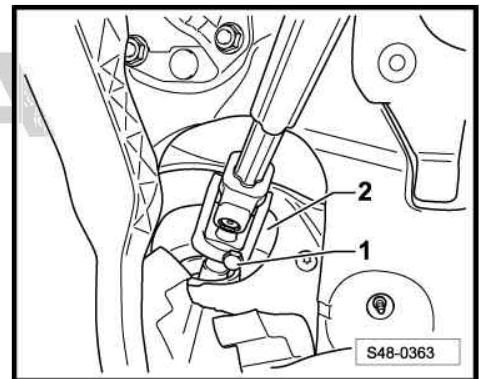
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

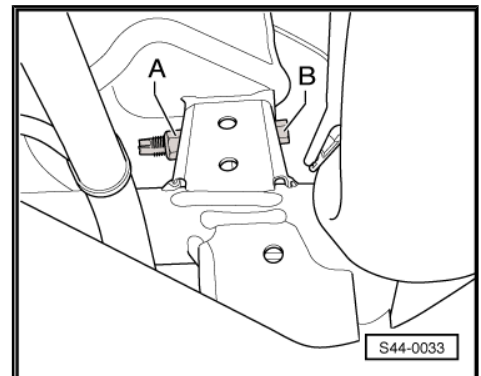
- ◆ ⇒ [“3.1.1 Assembly overview - subframe, sheet steel assembly carrier, left-hand drive”, page 58](#)
- ◆ ⇒ [“3.1.2 Assembly overview - subframe, sheet steel assembly carrier, right hand drive”, page 62](#)
- ◆ Noise insulation ⇒ Body work assembly; Rep. gr. 50



3.7 Adjust the camber on the rear axle

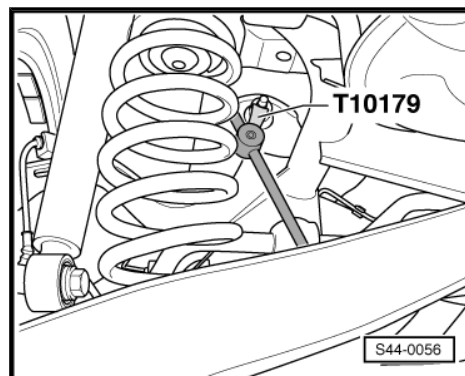
Special tools and workshop equipment required

- ◆ Shock absorber set , e.g. -T10001-
- ◆ Insertion tool -T10179-
- Fitting position of the adjusting screw.
- Slacken the nut -A- of the screw connection for top suspension arm to assembly carrier.





- To do this use insertion tool - T10179- .
- Adjust the camber by turning the eccentric bolt -B-.



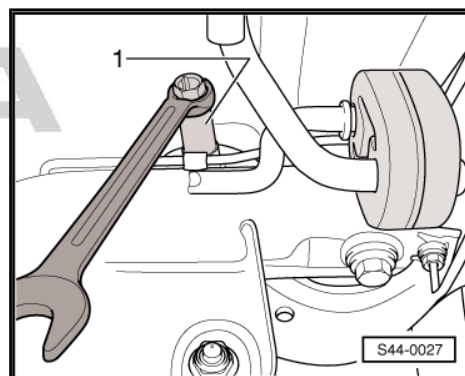
- Turn the eccentric bolt -B- using socket insert , e.g. - T10001/3- .

1 - Socket insert e.g. -T10001/3-

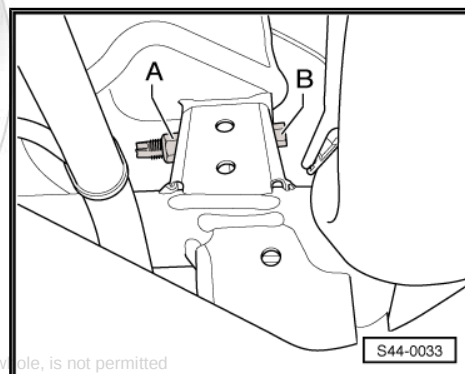


Note

The maximum adjustment range is 90 ° from the centre position to the left or to the right.



- Tighten the nut -A- while counterholding at the eccentric bolt -B-.



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- To do this use insertion tool - T10179- .

When using the insertion tool - T10179- tighten the nut to 80 Nm.

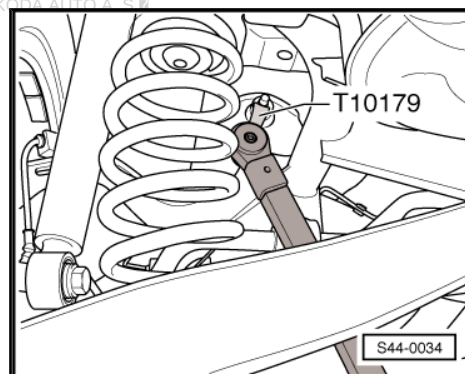
- After the nut -A- has been tightened, inspect once again the camber value.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

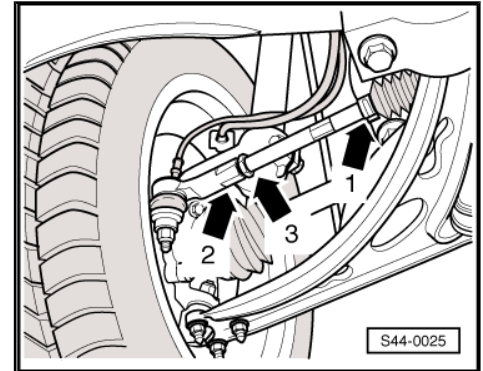


- ♦ ➔ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ♦ ➔ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)

Component	Tightening torque
Top wishbone using the insertion tool - T10179-	80 Nm

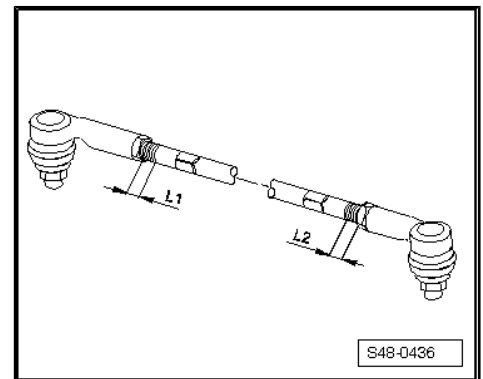
3.8 Adjust the track on the front axle

- Release nut -3- while counterholding the track rod end -2-.
- Pull off the spring strap clip -1- from the bellows.
- Adjust track by turning the left and/or right track rod.



i Note

- ◆ *Turning the track rods and tightening the conternuts must be carried out in such a way that the difference of the visible thread lengths on the left -L1- and the right -L2- of the track rod does not exceed 2 mm.*
- ◆ *A greater difference is noticeable because of incorrect axle measurement. This influences the tyre life and the driving behaviour deteriorates.*
- ◆ *Check that the bellows have not become twisted after turning the track rods!*
- ◆ *Twisted bellows wear fast.*
- Tighten conternut with socket insert while doing so counterhold on the track rod end.
- Check the track value once again.



If the measured toe value lies within tolerance then the adjustment is OK.

- Fit spring strap clip onto the bellows.

Vehicles with ESP

- Follow the notes ⇒ [page 307](#) .

Continued for all vehicles

- Perform basic setup of the steering angle encoder - G85- using the diagnosis device - VAS- ⇒ Vehicle diagnostic tester

Tightening torques - summaries of components

i Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.6 Repairing steering box”, page 380](#)



3.9 Adjust the track on the rear axle

- Release the nut -1-.
- Turn the eccentric bolt -2- until the specified value is achieved and the nut -1- is tightened.

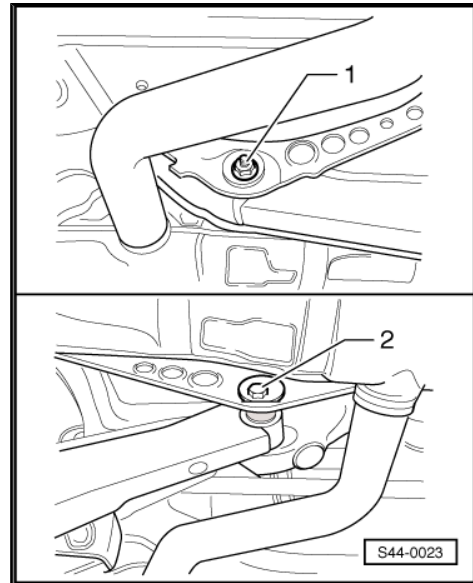
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“2.1.1 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with front drive”, page 198](#)
- ♦ ⇒ [“2.1.2 Summary of components: Assembly carrier, suspension arm, track rod for rear axle, vehicles with four-wheel drive”, page 202](#)



3.10 Check position of steering wheel, align if necessary

Check position of steering wheel

Special tools and workshop equipment required

- ♦ Steering wheel scale , e.g. -VAS 6458-
- Put the front wheels in straight ahead position.
- Place the steering wheel scale , e.g. -VAS 6458- , on the steering wheel.

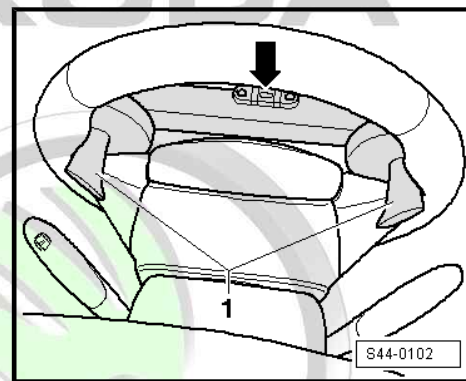
The supports -1- of the steering wheel scale must rest against the steering wheel spokes.

- Check the alignment of the steering wheel through the wind-screen -arrow-.

Align position of steering wheel

If the steering wheel is not in the horizontal position and a noticeable maximum toe difference angle is obtained during the preceding axle alignment.

- Align the steering wheel by turning it horizontally.
- Correct the track by turning the left and right track rod.



Example:

The steering wheel was positioned to the right.

- Align the steering wheel by turning it horizontally.
- Release the counternuts on the track rods.
- Turn the track rod on the left (slightly unscrew from track-rod end).
- Turn the track rod on the right to the same extent (screw into track-rod end).
- Check overall track.

After this adjustment procedure the overall track must correspond with the specified set value!

- Tighten counternuts.

After tightening the counternuts the set value may change slightly.

Make sure this value remains within the tolerance of the nominal value. If this is not the case repeat the overall track adjustment operation.

Check that the bellows have not become twisted after turning the track rods!

If the steering wheel is not in the horizontal position and a noticeable maximum toe difference angle is not obtained during the preceding axle alignment.

- Reposition the steering wheel into the specified position ⇒ Body Work; Rep. gr. 69 .
- Check overall track.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.6 Repairing steering box”, page 380](#)
- ◆ Steering wheel ⇒ Body Work; Rep. gr. 69



48 – Steering

1 Steering column

⇒ [“1.1 Summary of components - steering column”, page 320](#)

⇒ [“1.2 Check the steering column for damage”, page 326](#)

⇒ [“1.3 Observe handling and transportation of the steering column”, page 326](#)

⇒ [“1.4 Removing and installing steering column”, page 328](#)

⇒ [“1.5 Removing and installing holder for steering column and frequency link”, page 349](#)

1.1 Summary of components - steering column

⇒ [“1.1.1 Overview of components - steering column, left-hand drive up to CW 44/2008”, page 320](#)

⇒ [“1.1.2 Steering column summary of components, right-hand drive to CW 44/2008”, page 322](#)

⇒ [“1.1.3 Summary of components - steering column, left-hand drive from CW 45/2008”, page 324](#)

⇒ [“1.1.4 Steering column summary of components, right-hand drive from CW 45/2008”, page 325](#)

1.1.1 Overview of components - steering column, left-hand drive up to CW 44/2008



Note

- ◆ ⇒ [“1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive”, page 349](#)
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- ◆ *Observe handling and transportation of the steering column*
⇒ [“1.3 Observe handling and transportation of the steering column”, page 326](#).
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

1 - Screw

- ☐ 20 Nm

2 - Frequency link

- ☐ Removing and installing
⇒ ["1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive"](#), page 349

3 - Central pipe

4 - Support

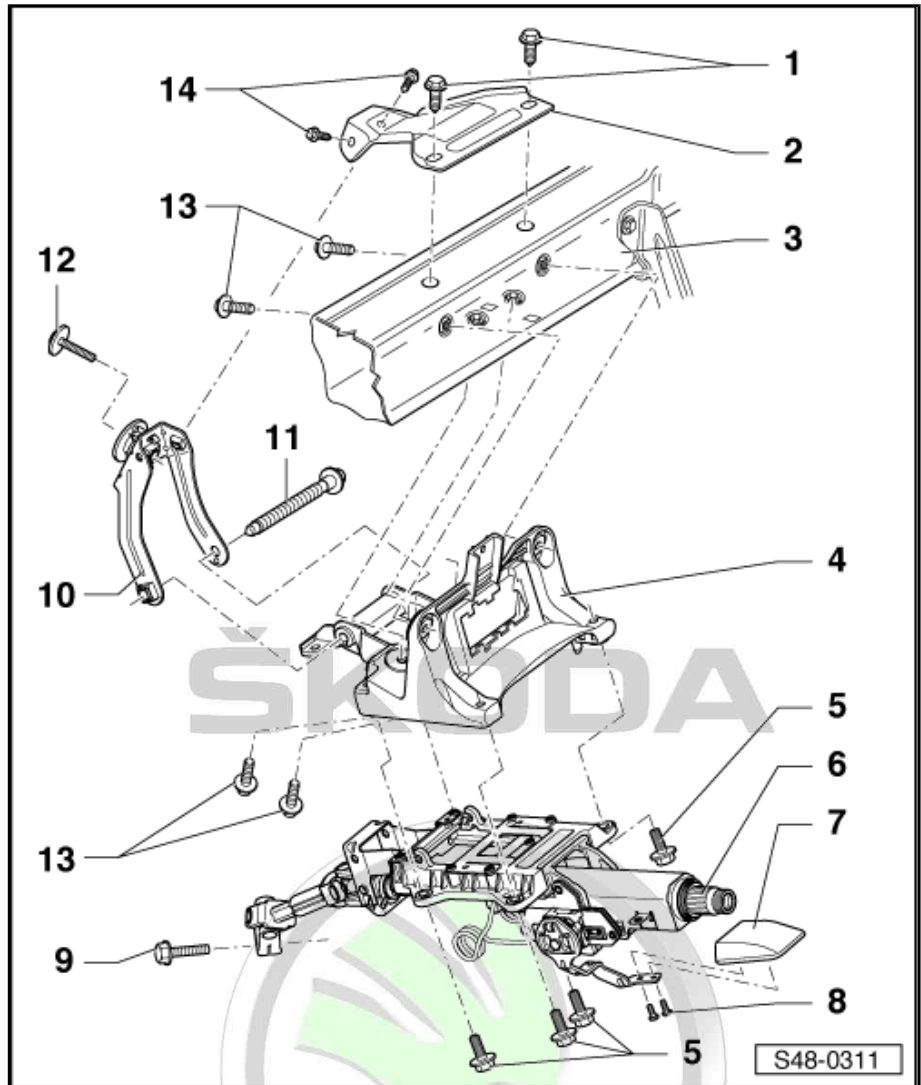
- ☐ Removing and installing
⇒ ["1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive"](#), page 349

5 - Screw

- ☐ M8 x 30
- ☐ 20 Nm

6 - Steering column

- ☐ Removing and installing
⇒ ["1.4.1 Removing and installing steering column - left-hand drive, up to CW 44/2008"](#), page 328
- ☐ check for damage
⇒ ["1.2 Check the steering column for damage"](#), page 326
- ☐ Observe handling and transportation
⇒ ["1.3 Observe handling and transportation of the steering column"](#), page 326



7 - Grip

8 - Screw

- ☐ M6 x 10
- ☐ 3 Nm

9 - Screw

- ☐ replace after each removal
- ☐ ⇒ Electronic Catalogue of Original Parts
- ☐ 30 Nm

10 - Frequency link

- ☐ Removing and installing
⇒ ["1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive"](#), page 349

11 - Screw

- ☐ M8 x 94
- ☐ 20 Nm

12 - Screw

- ☐ M8 x 48
- ☐ 25 Nm

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13 - Screw

- ☐ M8 x 85
- ☐ 20 Nm

14 - Screw

- ☐ 8 Nm

1.1.2 Steering column summary of components, right-hand drive to CW 44/2008



Note

- ◆ *Observe handling and transportation of the steering column*
⇒ [“1.3 Observe handling and transportation of the steering column”, page 326](#).
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

1 - Screw

- ☐ 20 Nm

2 - Frequency link

- ☐ Removing and installing
⇒ [“1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive”, page 352](#)

3 - Central pipe

4 - Support

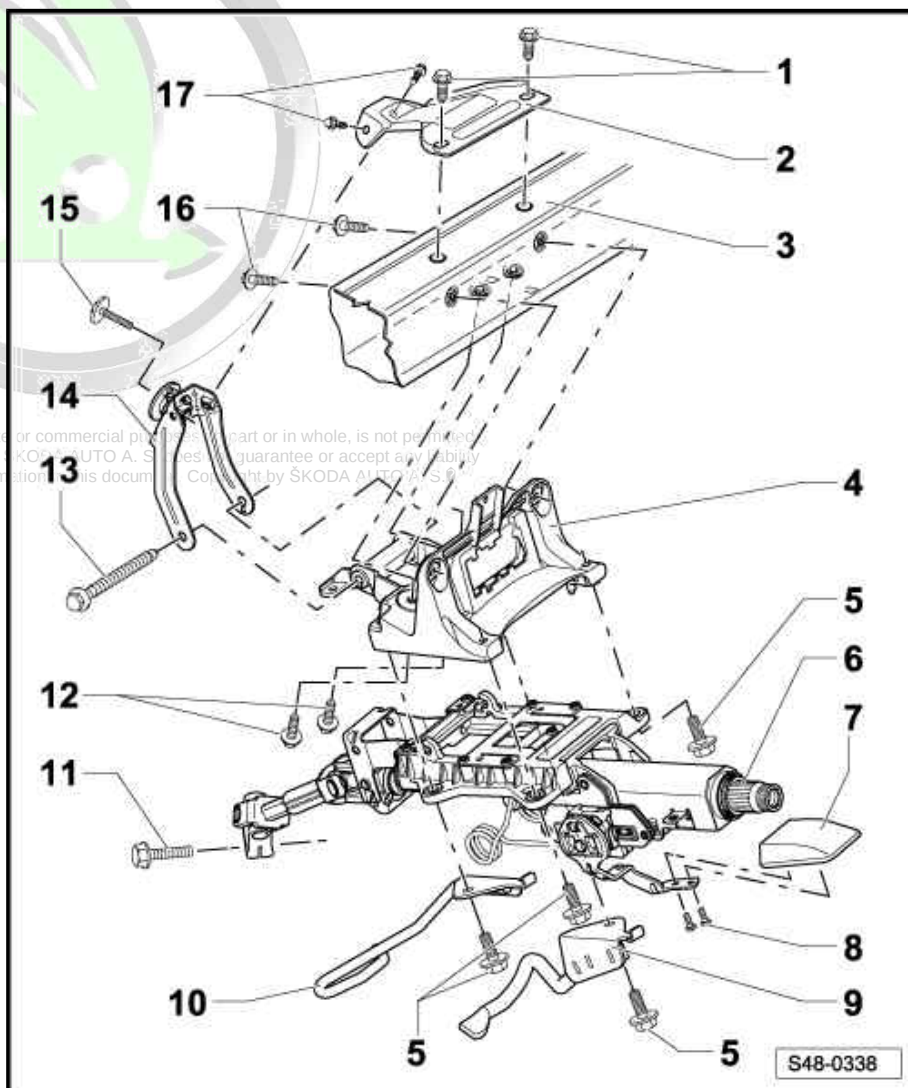
- ☐ Removing and installing
⇒ [“1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive”, page 352](#)

5 - Screw

- ☐ M8 x 30
- ☐ 20 Nm

6 - Steering column

- ☐ Removing and installing
⇒ [“1.4.2 Removing and installing steering column, right-hand drive vehicles to CW 44/2008”, page 333](#)
- ☐ check for damage
⇒ [“1.2 Check the steering column for damage”, page 326](#)
- ☐ Observe handling and transportation
⇒ [“1.3 Observe handling and transportation of the steering column”, page 326](#)



7 - Grip

8 - Screw

- ☐ M6 x 10
- ☐ 3 Nm

9 - Crash bar

- ☐ for brake pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

10 - Crash bar

- ☐ for the clutch pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

11 - Screw

- ☐ replace after each removal
- ☐ ⇒ Electronic Catalogue of Original Parts
- ☐ 30 Nm

12 - Screw

- ☐ M8 x 30
- ☐ 20 Nm

13 - Screw

- ☐ M8 x 94
- ☐ 20 Nm

14 - Frequency link

- ☐ Removing and installing
⇒ ["1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive",
page 352](#)

15 - Screw

- ☐ M8 x 48
- ☐ 25 Nm

16 - Screw

- ☐ M8 x 85
- ☐ 20 Nm

17 - Screw

- ☐ 8 Nm



1.1.3 Summary of components - steering column, left-hand drive from CW 45/2008



Note

- ♦ *Observe handling and transportation of the steering column*
⇒ *"1.3 Observe handling and transportation of the steering column", page 326*.
- ♦ *Always replace corroded self-locking nuts and screws.*

1 - Central pipe

2 - Steering column

- ☐ Removing and installing
⇒ *"1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008", page 339*
- ☐ check for damage
⇒ *"1.2 Check the steering column for damage", page 326*
- ☐ Observe handling and transportation
⇒ *"1.3 Observe handling and transportation of the steering column", page 326*

3 - Crash bar

- ☐ for brake pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

4 - Screw

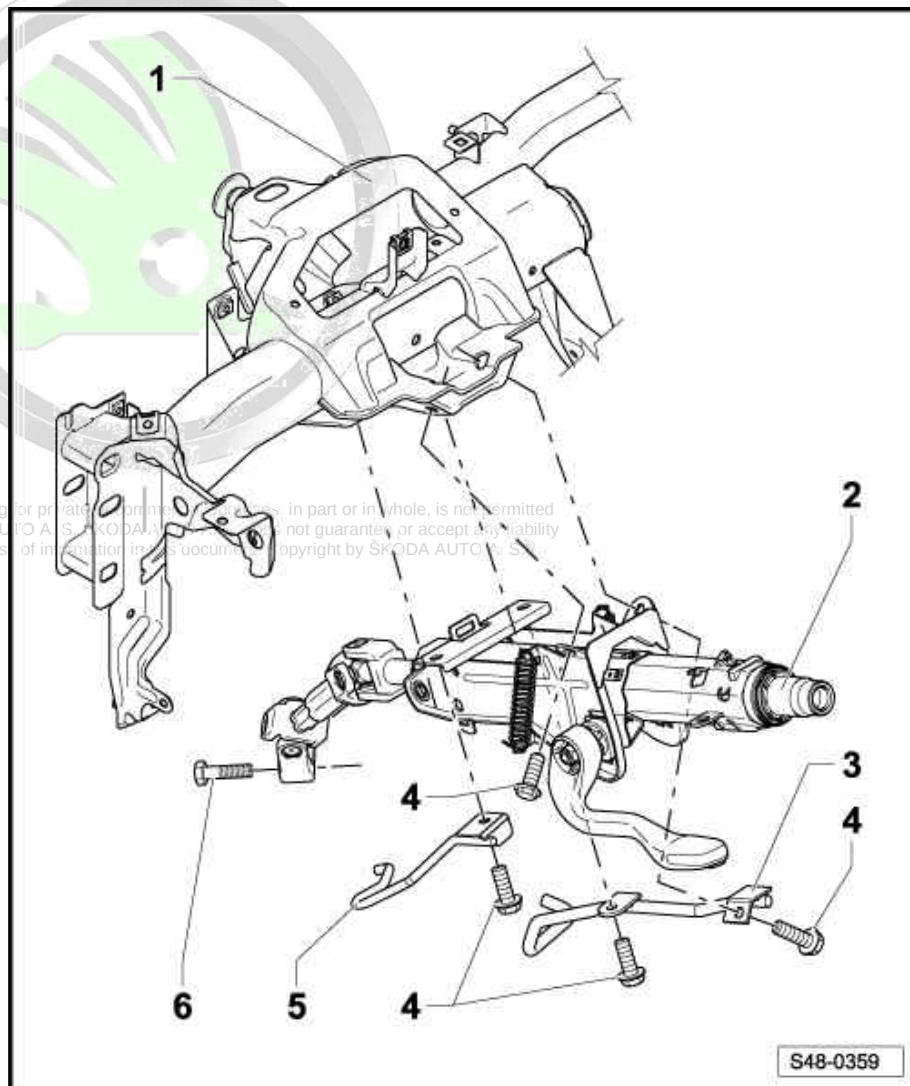
- ☐ M8 x 30
- ☐ 20 Nm

5 - Crash bar

- ☐ for the clutch pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

6 - Screw

- ☐ M8 x 35
- ☐ replace after each removal
- ☐ 30 Nm



1.1.4 Steering column summary of components, right-hand drive from CW 45/2008



Note

- ◆ *Observe handling and transportation of the steering column*
⇒ *[“1.3 Observe handling and transportation of the steering column”, page 326](#)*.
- ◆ *Self-locking nuts must always be replaced.*
- ◆ *Always replace corroded self-locking nuts and screws.*

1 - Screw

- ☐ 20 Nm

2 - Frequency link

- ☐ Removing and installing
⇒ *[“1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive”, page 352](#)*

3 - Central pipe

4 - Support

- ☐ Removing and installing
⇒ *[“1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive”, page 352](#)*

5 - Steering column

- ☐ Removing and installing
⇒ *[“1.4.4 Removing and installing steering column, right-hand drive as of CW 45/2008”, page 343](#)*
- ☐ check for damage
⇒ *[“1.2 Check the steering column for damage”, page 326](#)*
- ☐ Observe handling and transportation
⇒ *[“1.3 Observe handling and transportation of the steering column”, page 326](#)*

6 - Screw

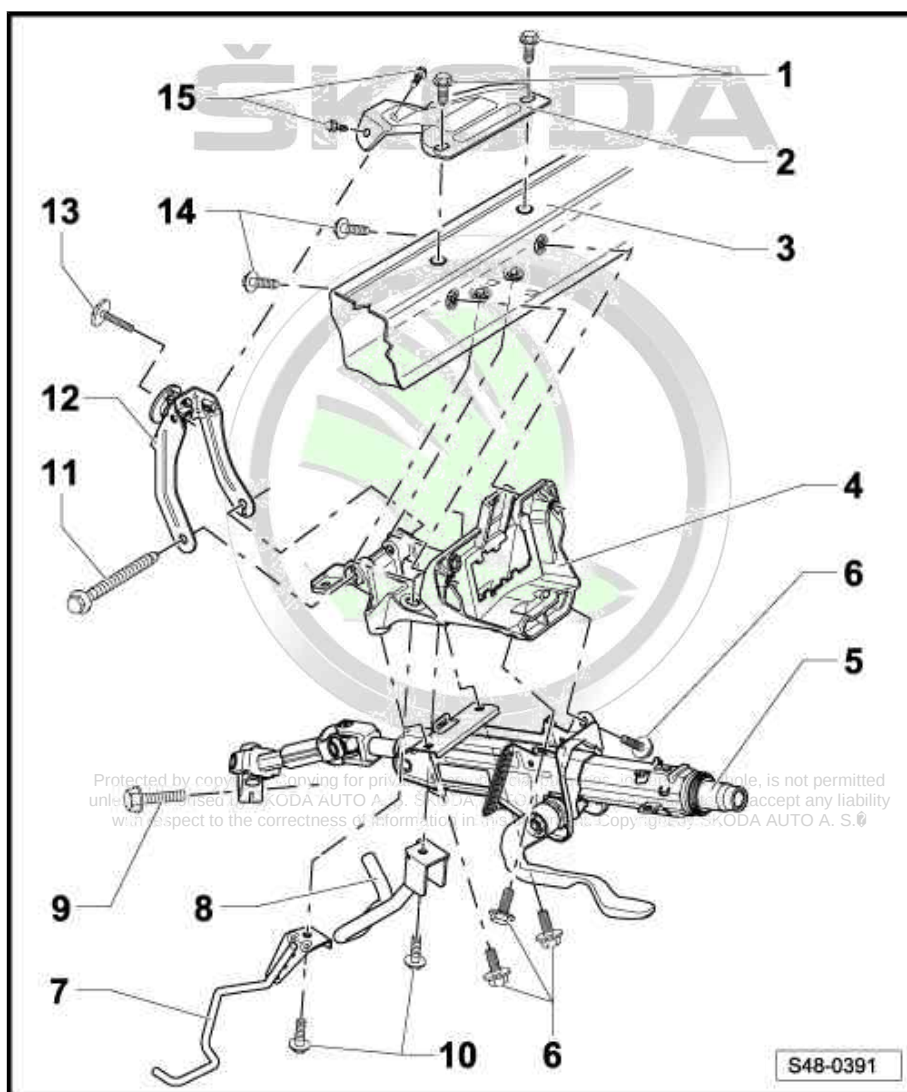
- ☐ M8 x 30
- ☐ 20 Nm

7 - Crash bar

- ☐ for the clutch pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

8 - Crash bar

- ☐ for brake pedal
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts





9 - Screw

- ☐ replace after each removal
- ☐ ⇒ Electronic Catalogue of Original Parts
- ☐ 30 Nm

10 - Screw

- ☐ M8 x 30
- ☐ 20 Nm

11 - Screw

- ☐ M8 x 94
- ☐ 20 Nm

12 - Frequency link

- ☐ Removing and installing
⇒ ["1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive", page 352](#)

13 - Screw

- ☐ M8 x 48
- ☐ 25 Nm

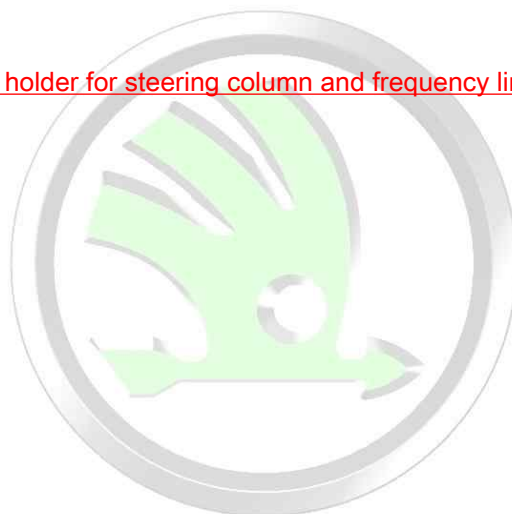
14 - Screw

- ☐ M8 x 85
- ☐ 20 Nm

15 - Screw

- ☐ 8 Nm

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1.2 Check the steering column for damage

Visual inspection

- Inspecting parts of the steering column for damage.

Check function

- Check whether the steering column turns freely without jerking.
- Check if the steering column is adjustable in longitudinal direction as well as in height and is easy to operate without hooking.

1.3 Observe handling and transportation of the steering column

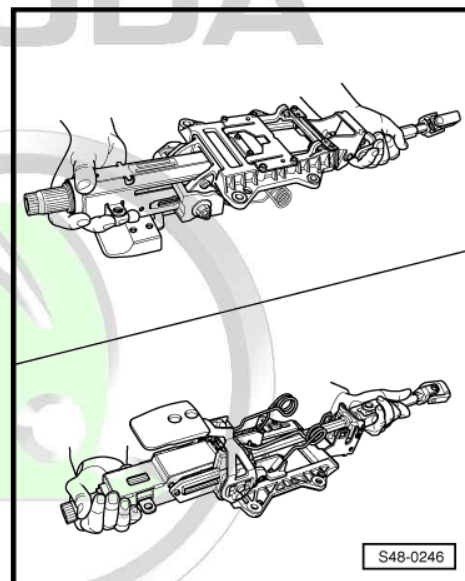


WARNING

- ◆ *The correct handling of the steering column must absolutely be respected.*
- ◆ *The incorrect handling of the steering column can lead to damages of the steering column and therefore to a risk of safety.*

Observe correct handling and transportation of the steering column

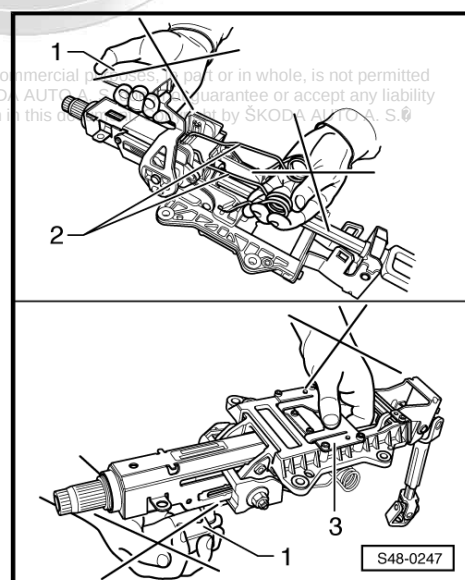
- ◆ Always transport the steering column with both hands.
- ◆ Always take hold of the steering column at the casing and in the area of the top universal joint.



Incorrect handling of the steering column

The transportation of the following parts leads to pre-damage of the steering column:

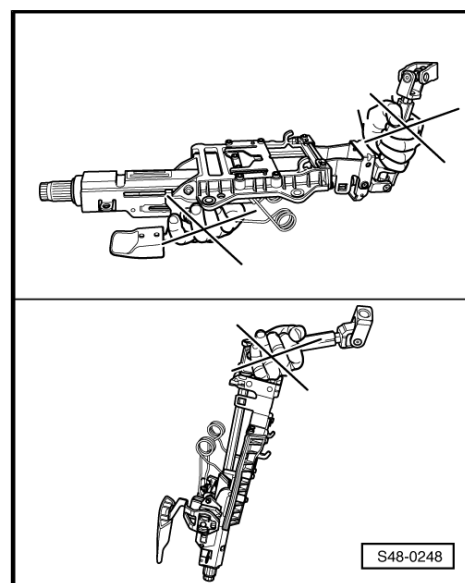
- 1 - Clamping lever
- 2 - Counterweight springs
- 3 - Deformation element



Incorrect handling of the steering column with safety risk

The following handlings lead to damage of the universal joint bushing of the lower steering column bearing:

- ◆ Transporting the steering column with one hand at the cardan shaft.
- ◆ Bending the drive shaft over 90°.





1.4 Removing and installing steering column

⇒ ["1.4.1 Removing and installing steering column - left-hand drive, up to CW 44/2008", page 328](#)

⇒ ["1.4.2 Removing and installing steering column, right-hand drive vehicles to CW 44/2008", page 333](#)

⇒ ["1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008", page 339](#)

⇒ ["1.4.4 Removing and installing steering column, right-hand drive as of CW 45/2008", page 343](#)

1.4.1 Removing and installing steering column - left-hand drive, up to CW 44/2008

Removing

The steering column is supplied as a spare part in the form of a complete assembly. Repairs are not allowed!

The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94 .

The switched on the steering column can be re-installed ⇒ Electrical system; Rep. gr. 94 .



WARNING

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Before working on the electrical system and the removal of the steering wheel the following conditions must be fulfilled:

- ◆ ***Every mechanic must discharge him/herself of electrostatic. This is done by touching an earthed metal part, such as e.g. a water pipes, heating pipes, metal brackets or a lift platform.***

Failure to comply with these precautions may lead to a subsequent failure of the ELV control unit - J764- !

- ◆ ***Disconnect battery earth strap ⇒ Electrical System; Rep. gr. 27 .***
- ◆ ***The wheels must be in the straight-ahead position.***

Failure to comply with these precautions may lead to subsequent failure of the airbag system!

- Put the front wheels in straight ahead position.
- Press the adjusting lever for steering column downwards.
- Press the steering column downwards, pull it towards you and lock with the adjusting lever (the lever upwards).
- Remove airbag and steering wheel ⇒ Body Work; Rep. gr. 69 .
- Remove bottom steering column trim panel ⇒ Body Work; Rep. gr. 70 .
- Remove storage compartment on the driver's side.
- Removing dash panel insert ⇒ Electrical System; Rep. gr. 90 .
- Disconnect the plug from the steering column electronics control unit -J527- ⇒ Electrical System; Rep. gr. 94 .

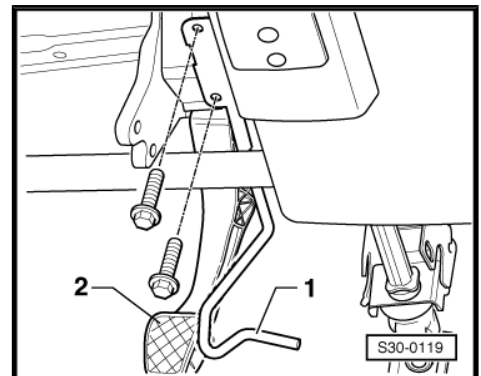
- Disconnect the plug from the immobilizer reading coil (remove lock cylinder from steering lock housing) ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced

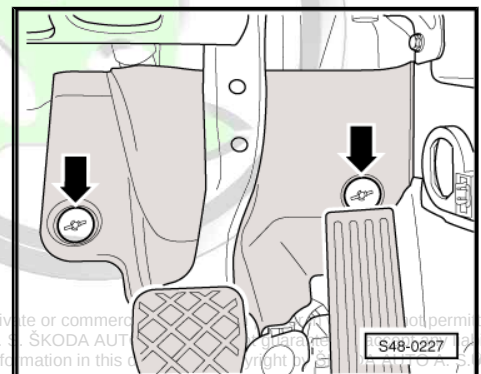
- After disconnecting the plug from the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ⇒ Electrical System; Rep. gr. 94 .
- Remove crash strut for clutch pedal -1-.
- Remove crash strut for brake pedal (if present).



- Remove earth line -1- from the steering column.
- Unclip cable guide -2-.



- Remove fixing nuts -arrows- and remove footwell covering.



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- Remove screw -1- and pull off the universal joint -2- from the steering gear in -direction of arrow-.

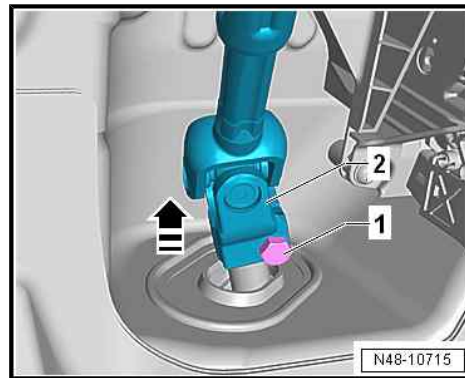


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.



- First remove the fixing screw -arrow- for the fuse holder and then the screws -1-.
- Carefully remove steering column from the top.

Observe handling and transportation of the steering column
⇒ **“1.3 Observe handling and transportation of the steering column”, page 326** .

Installing

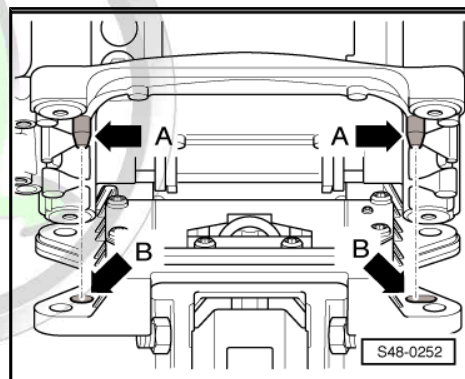
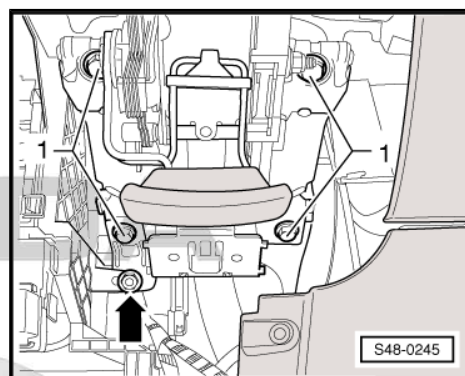
The ignition lock housing can be modified ⇒ Electrical System;
Rep. gr. 94 .

When replacing the steering column, refit the steering column switches ⇒ Electrical System; Rep. gr. 94 .

- Hook the steering column with the hangers at the holder for steering column.
- Align steering column to the holder for steering column and position.

When doing so the studs -arrows A- of the holder for steering column and the holes -arrows B- of the steering column must be positioned to each other and put into each other.

The correct fitting location of the steering column to the holder for steering column is only guaranteed as such.

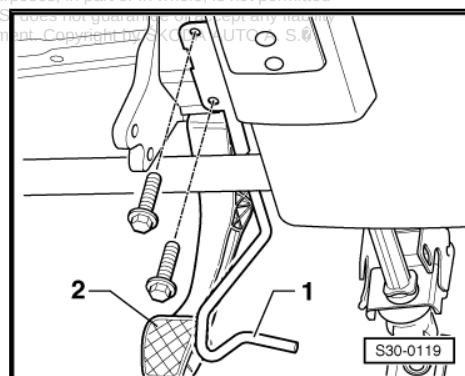


- Install strut for clutch pedal -1-.
- Install crash strut for brake pedal (if present).

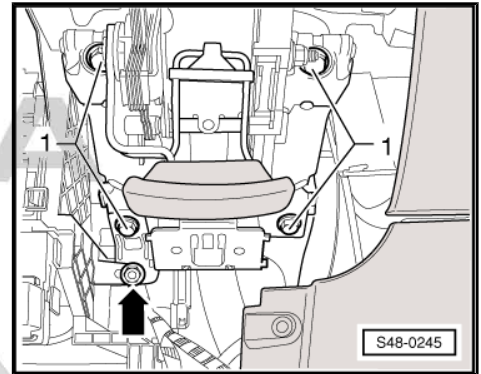


Note

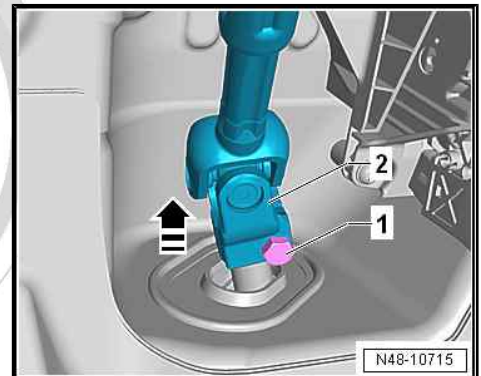
The crash struts for the brake and clutch pedal are screwed with the steering column at the holder for steering column.



- Tighten the screws -1- of the steering column.
- Tighten the fixing screw -arrow- for the fuse holder ⇒ Electrical System; Rep. gr. 97 .



- Fit the universal joint -2- against the -direction of arrow- on the steering pinion.
- Tighten new screw -1-.



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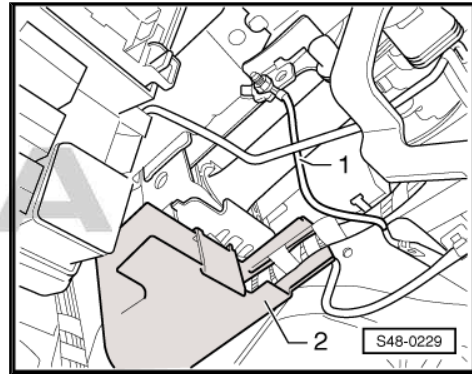


- Clip in cable guide -2- at steering column.
- Screw the earth line -1- to the steering column.
- Fit the plug onto the steering column electronics control unit - J527- ➔ Electrical System; Rep. gr. 94 .
- Fit the plug onto the immobilizer reading coil (remove lock cylinder from steering lock housing) ➔ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced



- After fitting the plug onto the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ➔ Electrical System; Rep. gr. 94 .
- Install bottom steering column trim panel ➔ Body Work; Rep. gr. 70 .
- Install steering wheel and airbag ➔ Body Work; Rep. gr. 69 .
- Installing dash panel insert ➔ Electrical System; Rep. gr. 90 .
- Install storage compartment on the driver's side.
- Perform basic setting of the steering angle sender - G85- ➔ Vehicle diagnostic tester.

After the following installation work the basic setting of the steering angle sender - G85- must be checked:

- ◆ if the steering angle encoder - G85- was removed or replaced¹⁾
- ◆ after removal or replacement of the steering column
- ◆ after removal or replacement of the ignition lock housing with steering column switch¹⁾
- ◆ after removal or replacement of the steering gear
- ◆ if the steering wheel was offset

¹⁾ Only applies for vehicles with the sender fitted between the steering wheel and the steering column switch.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ➔ ["1.1.1 Overview of components - steering column, left-hand drive up to CW 44/2008", page 320](#)
- ◆ Airbag and steering wheel ➔ Body Work; Rep. gr. 69
- ◆ Top and bottom steering column trim panel ➔ Body Work; Rep. gr. 70
- ◆ Storage area on the driver's side ➔ Body Work; Rep. gr. 70
- ◆ Dash panel insert ➔ Electrical System; Rep. gr. 90
- ◆ Steering column control ➔ Electrical System; Rep. gr. 94

- ◆ Switch unit ⇒ Electrical system; Rep. gr. 94

1.4.2 Removing and installing steering column, right-hand drive vehicles to CW 44/2008

Removing

The steering column is supplied as a spare part in the form of a complete assembly. Repairs are not allowed!

The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94 .

The switched on the steering column can be re-installed ⇒ Electrical system; Rep. gr. 94 .



WARNING

Before working on the electrical system and the removal of the steering wheel the following conditions must be fulfilled:

- ◆ ***Every mechanic must discharge him/herself of electrostatic. This is done by touching an earthed metal part, such as e.g. a water pipes, heating pipes, metal brackets or a lift platform.***

Failure to comply with these precautions may lead to a subsequent failure of the ELV control unit - J764- !

- ◆ ***Disconnect battery earth strap ⇒ Electrical System; Rep. gr. 27 .***

- ◆ ***The wheels must be in the straight-ahead position.***

Failure to comply with these precautions may lead to subsequent failure of the airbag system!

- Put the front wheels in straight ahead position.
- Press the adjusting lever for steering column downwards.
- Press the steering column downwards, pull it towards you and lock with the adjusting lever (the lever upwards).
- Remove airbag and steering wheel ⇒ Body Work; Rep. gr. 69 .
- Remove bottom steering column trim panel ⇒ Body Work; Rep. gr. 70 .
- Disconnect the plug from the steering column electronics control unit -J527- ⇒ Electrical System; Rep. gr. 94 .
- Disconnect the plug from the immobilizer reading coil (remove lock cylinder from steering lock housing) ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced

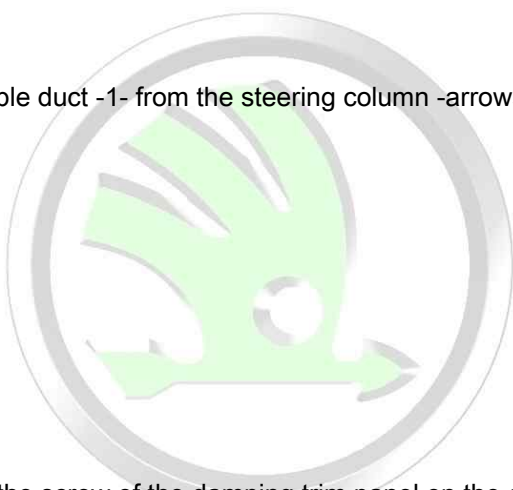
- After disconnecting the plug from the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ⇒ Electrical System; Rep. gr. 94 .



- Remove bottom part of the dash panel and the damping trim panel ⇒ Body work; Rep. gr. 70 .
- Remove right footwell vent ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Remove the earth line -arrow A- from the steering column.
- Remove the cable guide -arrow B- from the steering column.

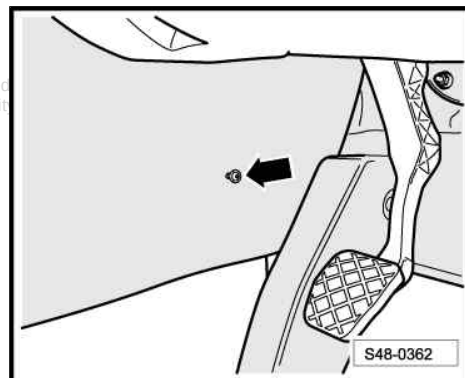
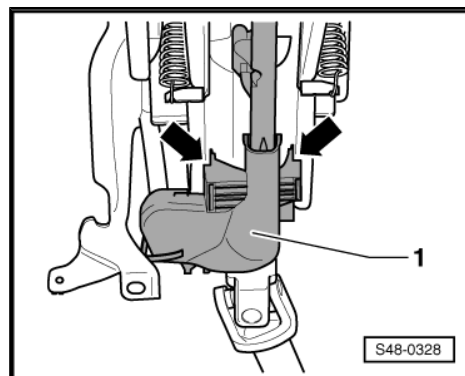
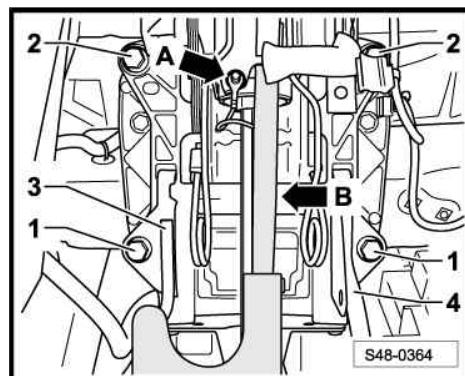
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- Unclip cable duct -1- from the steering column -arrows-.

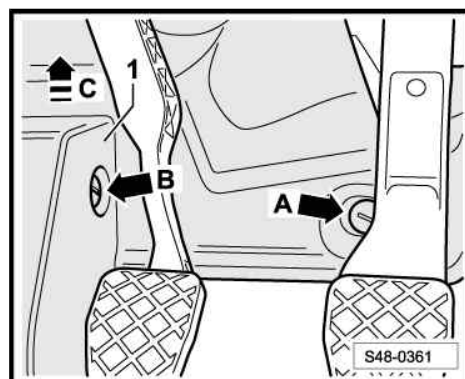


- Unscrew the screw of the damping trim panel on the centre console -arrow- and pull off the trim panel.

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- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip the footwell covering in -direction of arrow C- and remove.



- Remove screw -1- and pull off the universal joint -2- from the steering gear in -direction of arrow-.

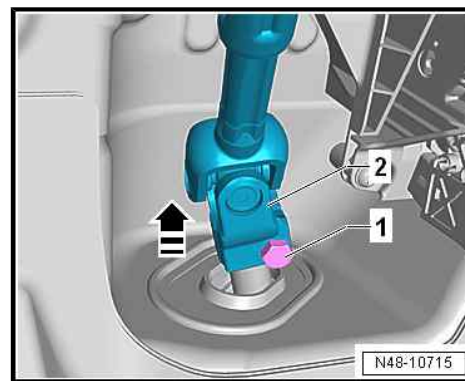


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.



- Remove the crash strut for the clutch pedal -3- and the brake pedal -4- (if present), while doing so slacken the screws -1- for the steering column.
- Unscrew the fixing screws -2- for the steering column, hold the steering column by hand.
- Unhook the steering column from the holder of the steering column towards you and carefully pull out.

Observe handling and transportation of the steering column
⇒ **"1.3 Observe handling and transportation of the steering column", page 326**.

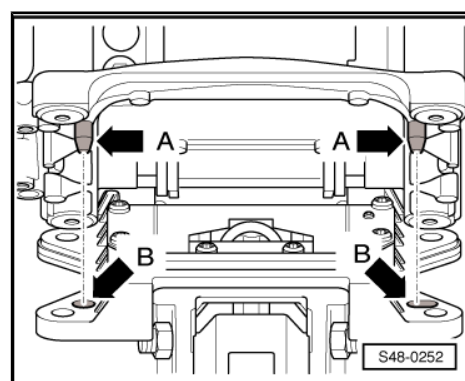
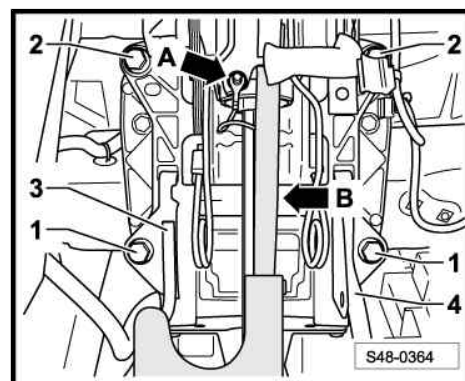
Installing

The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94.

When replacing the steering column, refit the steering column switches ⇒ Electrical System; Rep. gr. 94.

- Hook the steering column on the hangers at the holder for the steering column.
- Align and position the steering column in the holder for the steering column in such a way that the locking bolts -arrows A- of the holder for the steering column lock into the openings of the steering column -arrows B-.

The correct fitting location of the steering column to the holder for steering column is only guaranteed as such.



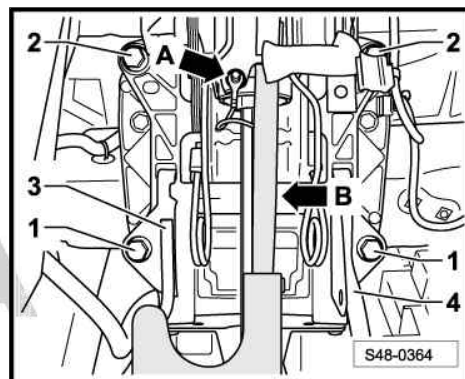


- Screw on the crash struts for the clutch pedal -3- and the brake pedal -4- (if present), while doing so tighten the screws -1- for the steering column.

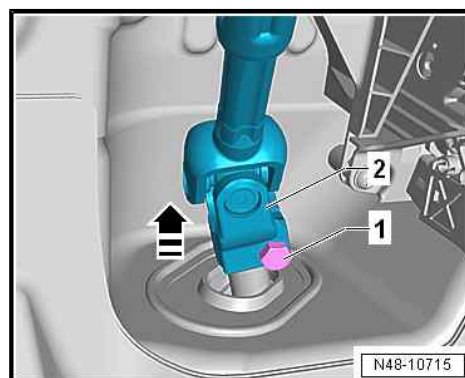


Note

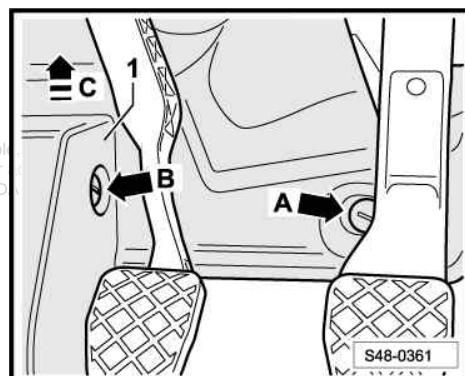
The crash struts for the brake and clutch pedal are screwed with the steering column at the holder for steering column.



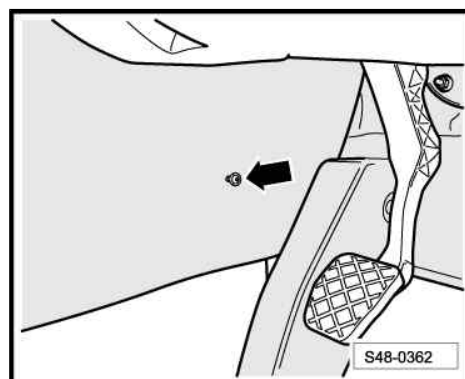
- Fit the universal joint -2- against the -direction of arrow- on the steering pinion.
- Tighten new screw -1-.



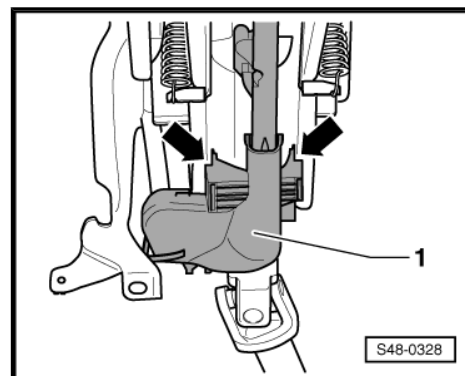
- Position the footwell covering and clip in against the -direction of arrow C-.
- Insert the expansion clamp of the covering into the opening -arrow B-.
- Screw on the fixing nuts -arrow A- and -arrow B- of the footwell covering.



- Pull the covering towards you and screw in the screw of the damping trim panel on the centre console -arrow-.



- Clip cable duct -1- onto steering column -arrows-.



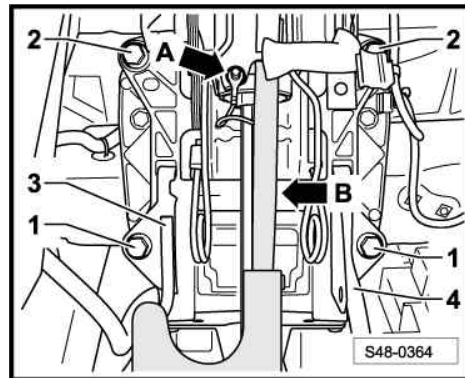
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- Attach the cable guide to the steering column -arrow B-.
- Screw the earth line -arrow A- onto the steering column.
- Install right footwell vent ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Insert the damping trim panel and install the bottom part of the dash panel ⇒ Body Work; Rep. gr. 70 .
- Remove the lock cylinder from the steering lock housing and fit the plug onto the immobilizer reading coil ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced

- Install lock cylinder.
- Fit the plug onto the steering column electronics control unit - J527- ⇒ Electrical System; Rep. gr. 94 .
- Install bottom steering column trim panel ⇒ Body Work; Rep. gr. 70 .
- Install steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .
- Perform basic setting of the steering angle sender - G85- ⇒ Vehicle diagnostic tester.

After the following installation work the basic setting of the steering angle sender - G85- must be checked:

- ◆ if the steering angle encoder - G85- was removed or replaced¹⁾
- ◆ after removal or replacement of the steering column
- ◆ after removal or replacement of the ignition lock housing with steering column switch¹⁾
- ◆ after removal or replacement of the steering gear
- ◆ if the steering wheel was offset

1) Only applies for vehicles with the sender fitted between the steering wheel and the steering column switch (2nd generation power-assisted steering).

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“1.1.2 Steering column summary of components, right-hand drive to CW 44/2008”, page 322](#)
- ◆ Airbag and steering wheel ⇒ Body Work; Rep. gr. 69
- ◆ Top and bottom steering column trim panel ⇒ Body Work; Rep. gr. 70
- ◆ Footwell vent ⇒ Heating, Air Conditioning; Rep. gr. 87
- ◆ Steering column control ⇒ Electrical System; Rep. gr. 94
- ◆ Switch unit ⇒ Electrical system; Rep. gr. 94

1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008

Removing

The steering column is supplied as a spare part in the form of a complete assembly. Repairs are not allowed!

The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94 .

When replacing the steering column, refit the steering column switches ⇒ Electrical System; Rep. gr. 94 .



WARNING

Before working on the electrical system and the removal of the steering wheel the following conditions must be fulfilled:

- ◆ ***Every mechanic must discharge him/herself of electrostatic. This is done by touching an earthed metal part, such as e.g. a water pipes, heating pipes, metal brackets or a lift platform.***

Failure to comply with these precautions may lead to a subsequent failure of the ELV control unit - J764- !

- ◆ ***Disconnect battery earth strap ⇒ Electrical System; Rep. gr. 27 .***
- ◆ ***The wheels must be in the straight-ahead position.***

Failure to comply with these precautions may lead to subsequent failure of the airbag system!

- Put the front wheels in straight ahead position.
- Press the adjusting lever for steering column downwards.
- Press the steering column downwards, pull it towards you and lock with the adjusting lever (the lever upwards).
- Remove airbag and steering wheel ⇒ Body Work; Rep. gr. 69 .
- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 70 .
- Disconnect the plug from the steering column electronics control unit -J527- ⇒ Electrical System; Rep. gr. 94 .
- Disconnect the plug from the immobilizer reading coil (remove lock cylinder from steering lock housing) ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced

- After disconnecting the plug from the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ⇒ Electrical System; Rep. gr. 94 .
- Remove bottom part of the dash panel and the damping trim panel ⇒ Body work; Rep. gr. 70 .



- Removing the left footwell vent ➔ Heating, Air Conditioning; Rep. gr. 80 .
- Remove earth cable -1- and cable guide -2- from the steering column.

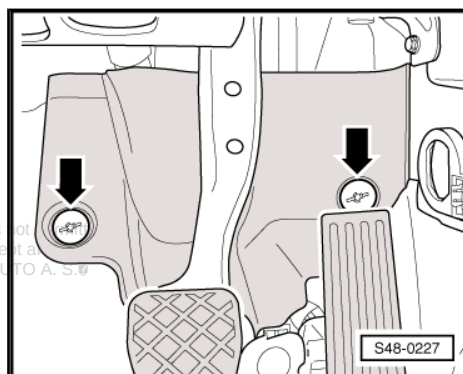
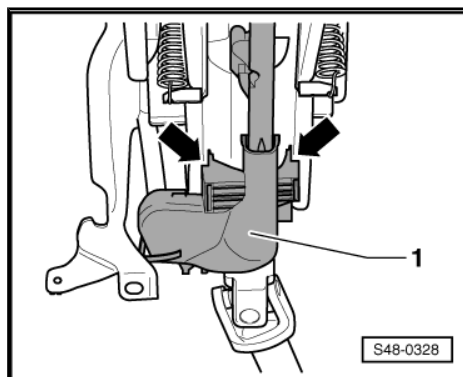
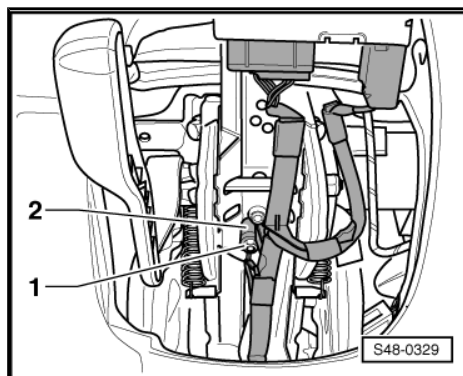
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- Remove cable duct -1- from the steering column -arrows-.



- Remove fixing nuts -arrows- and remove footwell covering.

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- Remove screw -1- and pull off the universal joint -2- from the steering gear in -direction of arrow-.

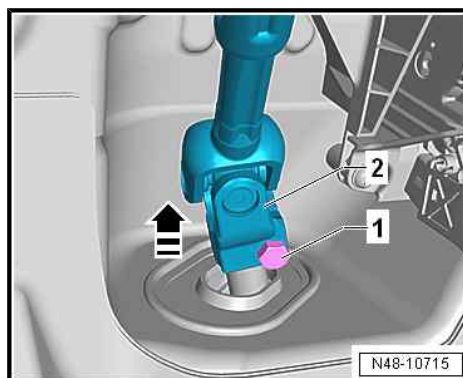


Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

You must observe these points because if you do not, irreparable damage may result.



- Remove fixing screws -2- and -3- for steering column and crash strut for brake pedal ⇒ [Item 3 \(page 324\)](#) (if present).
- Remove fixing screw -4- for steering column and crash strut for clutch pedal ⇒ [Item 5 \(page 324\)](#) (if present).
- Hold steering column and remove fixing screw -1-.
- Carefully remove the steering column in direction of the vehicle interior.

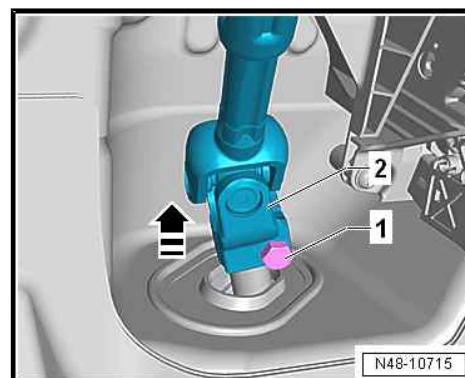
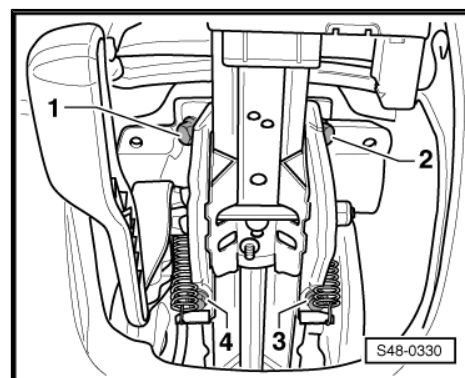
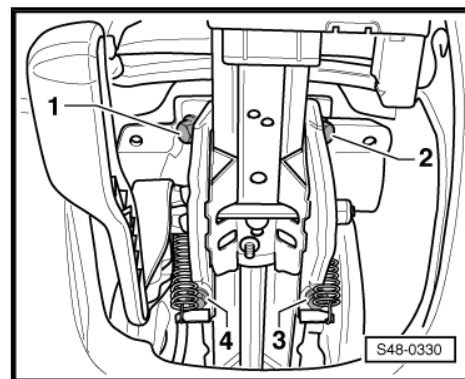
Observe handling and transportation of the steering column
⇒ [“1.3 Observe handling and transportation of the steering column”, page 326](#) .

Installing

The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94 .

When replacing the steering column, refit the steering column switches ⇒ Electrical System; Rep. gr. 94 .

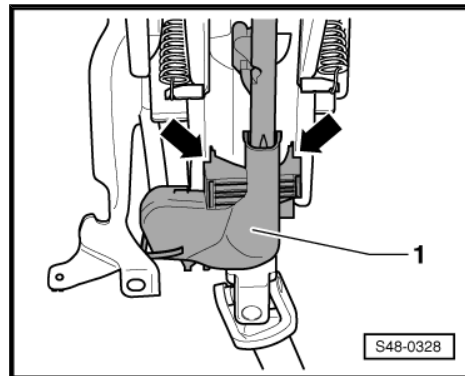
- Position the steering column on the holder (central pipe).
- Fix the steering column on the holder (central pipe) with screw -1-.
- Insert the screw -4- into the crash strut for clutch pedal ⇒ [Item 5 \(page 324\)](#) (if present) and attach the steering column.
- Insert the screws -2- and -3- into the crash strut for brake pedal ⇒ [Item 3 \(page 324\)](#) (if present) and attach the steering column.
- Tighten screws -1- and -2- and while doing so, check if the steering column lies flush at the holder for steering column (central pipe).
- Tighten screws -3- and -4-.
- Fit the universal joint -2- against the -direction of arrow- on the steering pinion.
- Tighten new screw -1-.



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- Install cable duct -1- on steering column -arrows-.

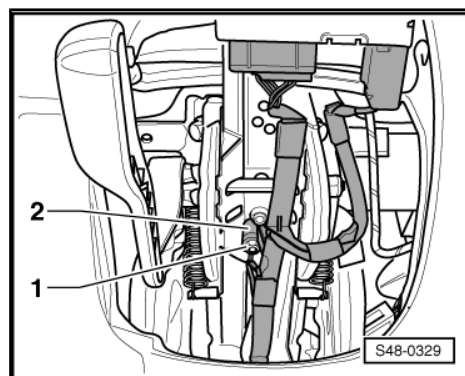


- Position cable guide -2- on steering column and screw on earth cable -1-.
- Fit the plug onto the steering column electronics control unit - J527- ⇒ Electrical System; Rep. gr. 94 .
- Fit the plug onto the immobilizer reading coil (remove lock cylinder from steering lock housing) ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced



- After fitting the plug onto the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ⇒ Electrical System; Rep. gr. 94 .
- Install footwell vent driver's side ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Install bottom and top steering column trim ⇒ Body Work; Rep. gr. 70 .
- Install steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .
- Install the damping trim panel and the bottom part of the dash panel ⇒ Body Work; Rep. gr. 70 .

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- Install footwell covering and fasten with nuts -arrows-.
- Perform basic setting of the steering angle sender - G85-
⇒ Vehicle diagnostic tester.

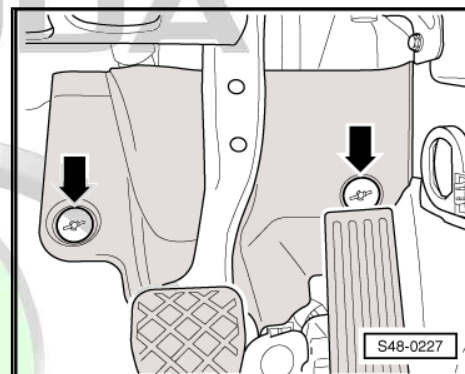
After the following installation work the basic setting of the steering angle sender - G85- must be checked:

- ◆ if the steering angle sender - G85- was removed or replaced¹⁾;
- ◆ after removal or replacement of the steering column;
- ◆ after removal or replacement of the ignition lock housing with steering column switch¹⁾;
- ◆ after removal or replacement of the steering gear;
- ◆ if the steering wheel was offset.

¹⁾ Only applies for vehicles with the sender fitted between the steering wheel and the steering column switch.

- ◆ ⇒ [“1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008”, page 339](#)

- ◆ Airbag and steering wheel ⇒ Body Work; Rep. gr. 69
- ◆ Top and bottom steering column trim panel ⇒ Body Work;
Rep. gr. 70
- ◆ Left footwell vent on the driver side ⇒ Heating, Air Condition-
ing; Rep. gr. 87
- ◆ Steering column control ⇒ Electrical System; Rep. gr. 94
- ◆ Switch unit ⇒ Electrical system; Rep. gr. 94



1.4.4 Removing and installing steering column, right-hand drive as of CW 45/2008

Removing

The steering column is supplied as a spare part in the form of a complete assembly. Repairs are not allowed!

The ignition lock housing can be modified ⇒ Electrical System;
Rep. gr. 94 .

The switched on the steering column can be re-installed ⇒ Electrical system; Rep. gr. 94 .



WARNING

Before working on the electrical system and the removal of the steering wheel the following conditions must be fulfilled:

- ◆ **Every mechanic must discharge him/herself of electrostatic. This is done by touching an earthed metal part, such as e.g. a water pipes, heating pipes, metal brackets or a lift platform.**

Failure to comply with these precautions may lead to a subsequent failure of the ELV control unit - J764- !

- ◆ **Disconnect battery earth strap ⇒ Electrical System; Rep. gr. 27 .**
- ◆ **The wheels must be in the straight-ahead position.**

Failure to comply with these precautions may lead to subsequent failure of the airbag system!



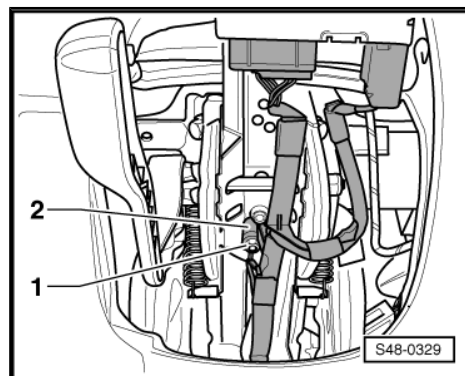
- Put the front wheels in straight ahead position.
- Press the adjusting lever for steering column downwards.
- Press the steering column downwards, pull it towards you and lock with the adjusting lever (the lever upwards).
- Remove airbag and steering wheel ⇒ Body Work; Rep. gr. 69 .
- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 70 .
- Disconnect the plug from the steering column electronics control unit -J527- ⇒ Electrical System; Rep. gr. 94 .
- Disconnect the plug from the immobilizer reading coil (remove lock cylinder from steering lock housing) ⇒ Electrical System; Rep. gr. 94 .



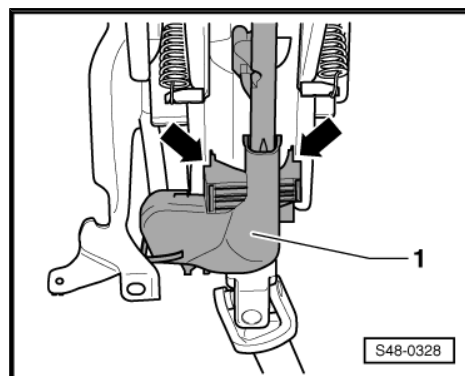
Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced

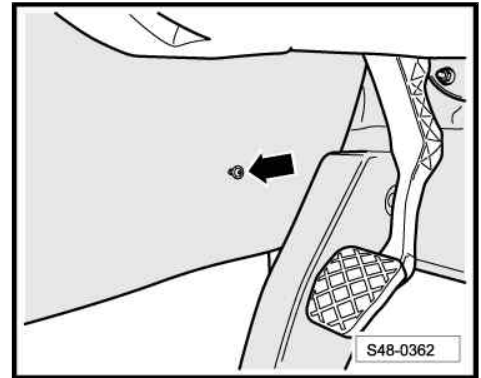
- After disconnecting the plug from the immobilizer reading coil, re-install the lock cylinder into the steering lock housing ⇒ Electrical System; Rep. gr. 94 .
- Remove bottom part of the dash panel and the damping trim panel ⇒ Body work; Rep. gr. 70 .
- Removing the left footwell vent ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Remove earth cable -1- and cable guide -2- from the steering column.



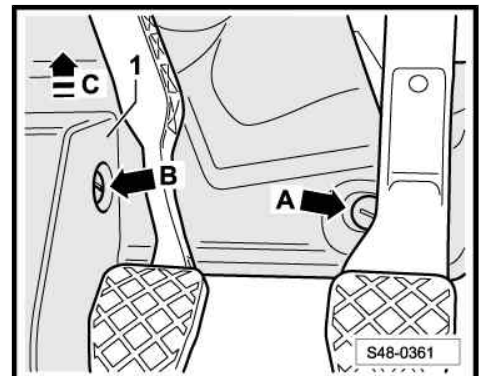
- Unclip cable duct -1- from the steering column -arrows-.



- Remove the screw of the damping trim panel on the centre console -arrow- and pull off the trim panel.



- Remove the fixing nut -arrow A- and the expansion clamp -arrow B- of the footwell covering.
- Unclip the footwell covering in -direction of arrow C- and remove.



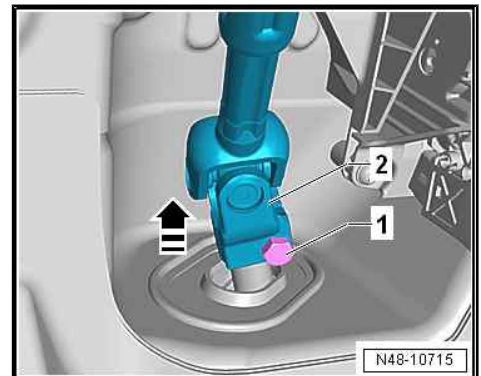
- Remove screw -1- and pull off the universal joint -2- from the steering gear in -direction of arrow-.

⚠ Caution

If the universal coupling is detached from the steering gear, do not carry out any of the following work

- ◆ Reconnecting battery
- ◆ Switch on the ignition
- ◆ Rotating the steering gear
- ◆ Rotating the steering column

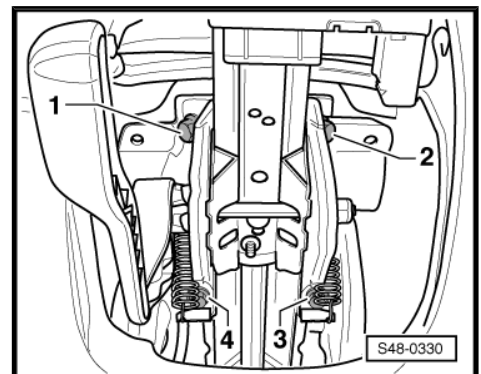
You must observe these points because if you do not, irreparable damage may result.



- Remove fixing screws -3- and -4- for steering column.

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- Remove fixing screws -1- and -2- for steering column, hold steering column.





- Slightly lower the steering column -1- and carefully pull out of the guide of the holder for the steering column in the direction of the vehicle interior.

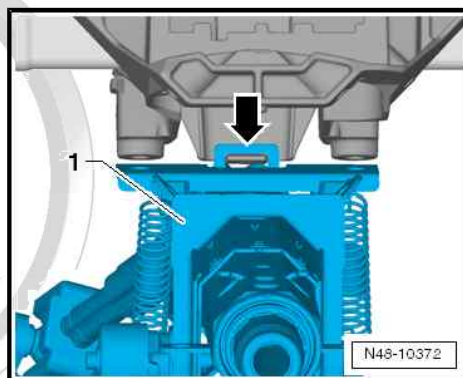
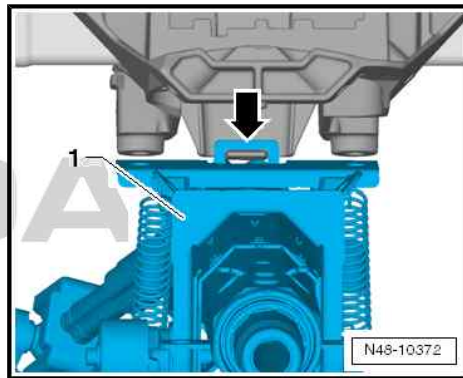
Observe handling and transportation of the steering column
⇒ **"1.3 Observe handling and transportation of the steering column", page 326** .

Installing

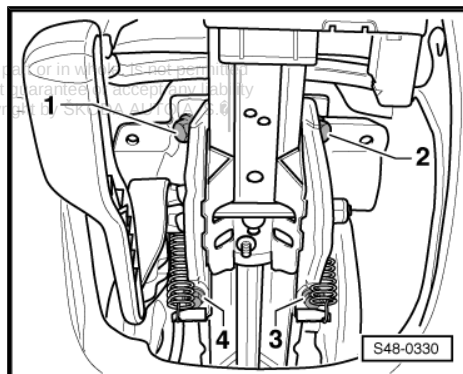
The ignition lock housing can be modified ⇒ Electrical System; Rep. gr. 94 .

When replacing the steering column, refit the steering column switches ⇒ Electrical System; Rep. gr. 94 .

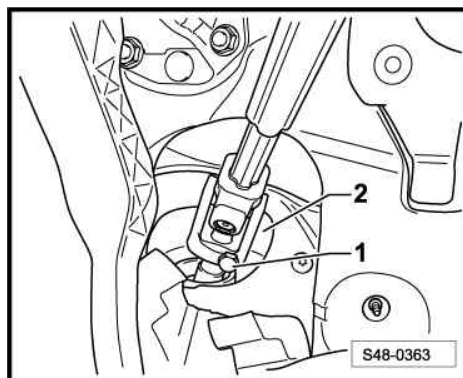
- Hook the steering column -1- with hanger onto the guide of the holder for the steering column -arrow-.



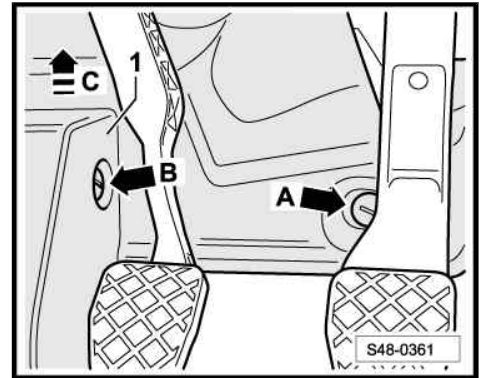
- Attach the steering column to the holder with screws -1- and -2-.
- Attach the steering column with screws -3- and -4-.
- Tighten screws -1- and -2- and while doing so, check if the steering column lies flush at the holder for steering column.
- Tighten screws -3- and -4-.



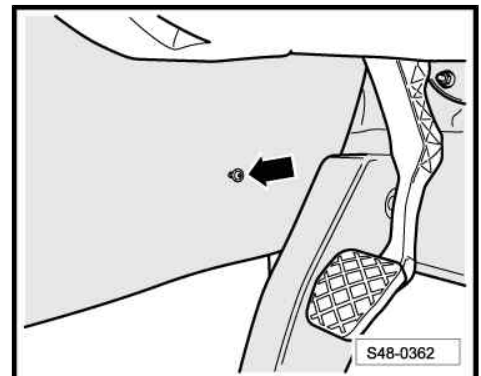
- Connect the universal joint -2- to the steering gear and screw in screw -1-.



- Position the footwell covering and clip in against the -direction of arrow C-.
- Insert the expansion clamp of the covering into the opening -arrow B-.
- Screw on the fixing nuts -arrow A- and -arrow B- of the footwell covering.

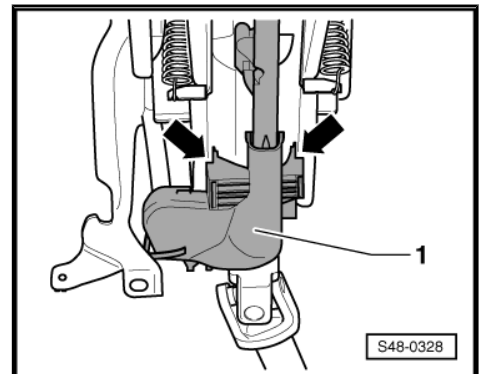
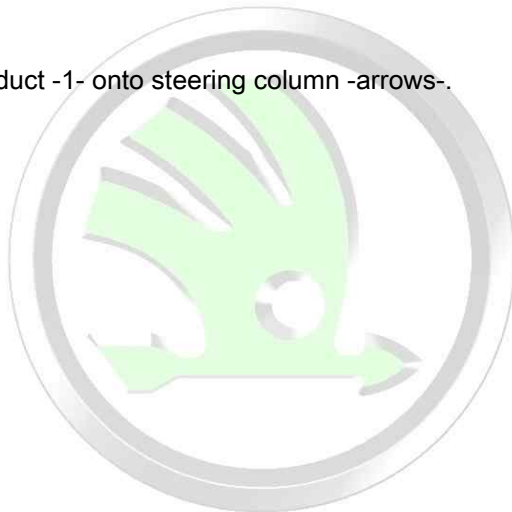


- Pull the covering towards you and screw in the screw of the damping trim panel on the centre console -arrow-.



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- Clip cable duct -1- onto steering column -arrows-.



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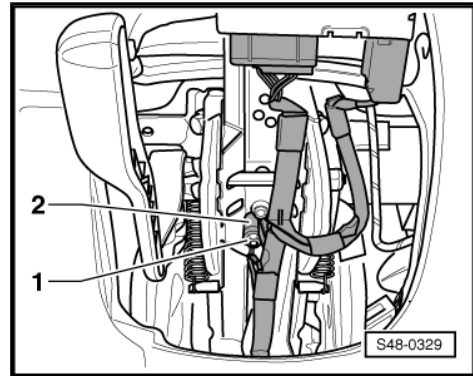


- Position cable guide -2- on steering column and screw on earth cable -1-.
- Install right footwell vent ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Insert the damping trim panel and install the bottom part of the dash panel ⇒ Body Work; Rep. gr. 70 .
- Remove the lock cylinder from the steering lock housing and fit the plug onto the immobilizer reading coil ⇒ Electrical System; Rep. gr. 94 .



Note

The steering lock must not be moved unless the lock cylinder is removed, otherwise it would block completely. The blocked steering lock must be replaced



- Install the lock cylinder into the steering lock housing.
- Fit the plug onto the steering column electronics control unit - J527- ⇒ Electrical System; Rep. gr. 94 .
- Install bottom steering column trim panel ⇒ Body Work; Rep. gr. 70 .
- Install steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .
- Perform basic setting of the steering angle sender - G85- ⇒ Vehicle diagnostic tester.

After the following installation work the basic setting of the steering angle sender - G85- must be checked:

- ◆ if the steering angle encoder - G85- was removed or replaced²⁾
- ◆ after removal or replacement of the steering column
- ◆ after removal or replacement of the ignition lock housing with steering column switch¹⁾
- ◆ after removal or replacement of the steering gear
- ◆ if the steering wheel was offset

2) Only applies for vehicles with the sender fitted between the steering wheel and the steering column switch (2nd generation power-assisted steering).

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["1.1.4 Steering column summary of components, right-hand drive from CW 45/2008", page 325](#)
- ◆ Airbag and steering wheel ⇒ Body Work; Rep. gr. 69
- ◆ Top and bottom steering column trim panel ⇒ Body Work; Rep. gr. 70
- ◆ Left footwell vent on the driver side ⇒ Heating, Air Conditioning; Rep. gr. 87
- ◆ Steering column control ⇒ Electrical System; Rep. gr. 94
- ◆ Switch unit ⇒ Electrical system; Rep. gr. 94

1.5 Removing and installing holder for steering column and frequency link

⇒ [“1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive”, page 349](#)

⇒ [“1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive”, page 352](#)

1.5.1 Removing and installing holder for steering column and frequency link, left-hand drive

Removing

- Remove steering column:

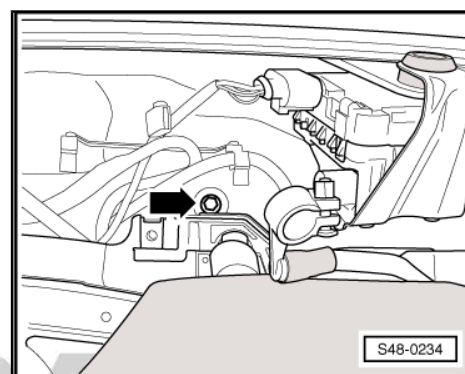
for vehicles up to CW 44/2008

⇒ [“1.4.1 Removing and installing steering column - left-hand drive, up to CW 44/2008”, page 328](#)

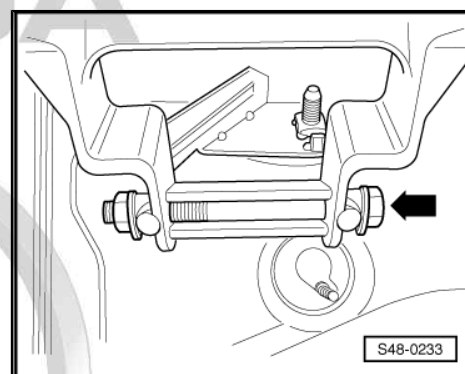
for vehicles as of CW 45/2008

⇒ [“1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008”, page 339](#)

- Removing the dash panel ⇒ Body Work; Rep. gr. 70 .
- Remove bulkhead plenum chamber ⇒ Body Work; Rep. gr. 66 .
- Remove screw -arrow- in the plenum chamber.

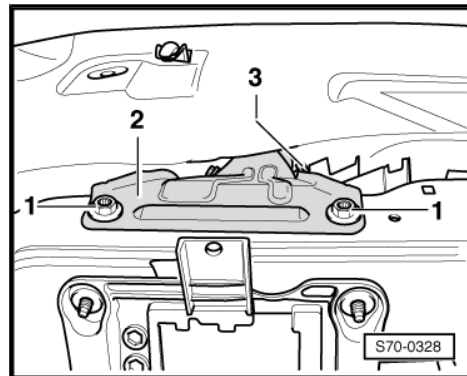


- Unscrew fixing screw -arrow- of holder for steering column/frequency link.

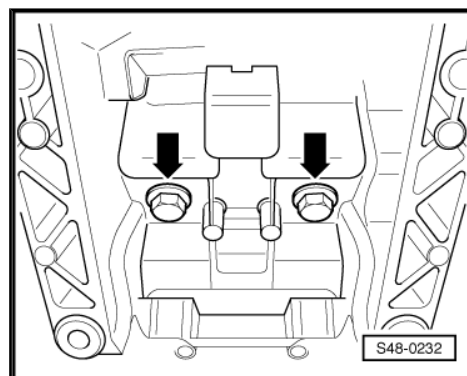




- Screw out the fixing screws -1- of the frequency link.
- Remove frequency link.



- Unscrew screws -arrow- below the holder.



- Remove screws -arrows- from holder at central pipe.



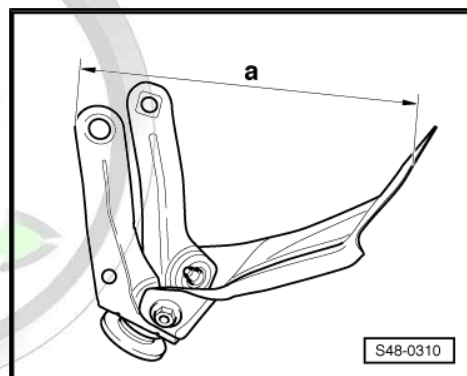
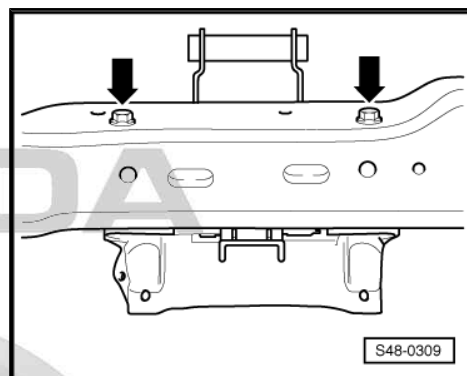
Note

The central pipe in the illustration is removed for purposes of clear presentation.

- Remove holder for steering column.

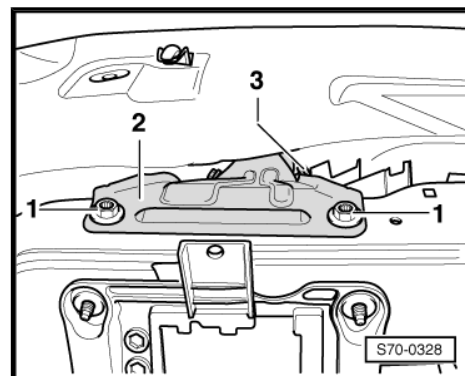
Installing

- Position holder for steering column at central pipe.
- Tighten the screws to the prescribed tightening torque.
- Screw frequency link outside the vehicle.
- Respect dimension -a- = 167 mm.
- Position frequency strut at central pipe.

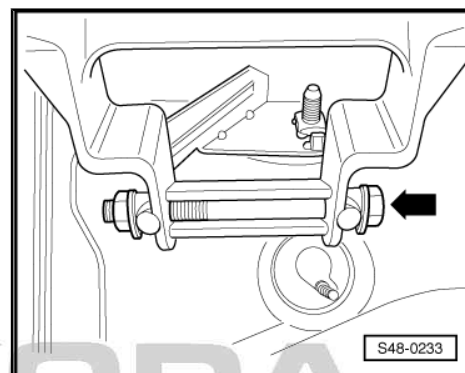


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- Screw in fixing screws -1- of frequency strut (do not tighten yet).



- Screw on fixing screw -arrow- of holder for steering column/frequency link.



- Attach frequency link to the body, tighten screw -arrow- to tightening torque.
- Tighten fixing screws of frequency link to the specified tightening torque.

Further installation occurs in reverse order.

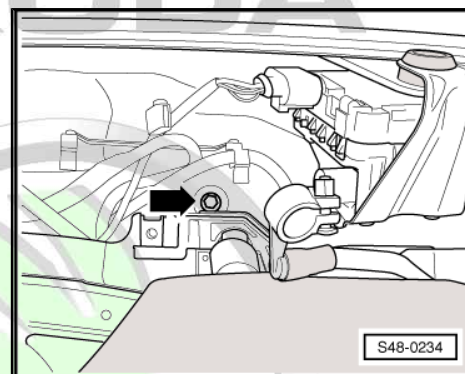
Installing the steering column

for vehicles up to CW 44/2008

⇒ [“1.4.1 Removing and installing steering column - left-hand drive, up to CW 44/2008”, page 328](#)

for vehicles as of CW 45/2008

⇒ [“1.4.3 Removing and installing steering column - left-hand drive, from CW 45/2008”, page 339](#)



Tightening torques - summaries of components



Note

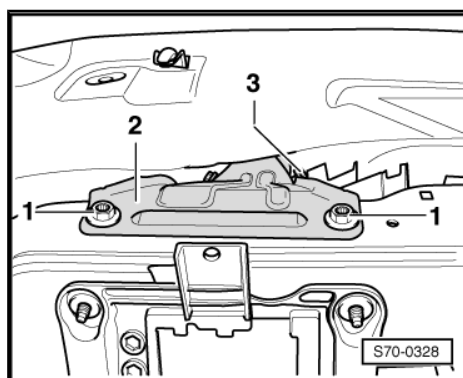
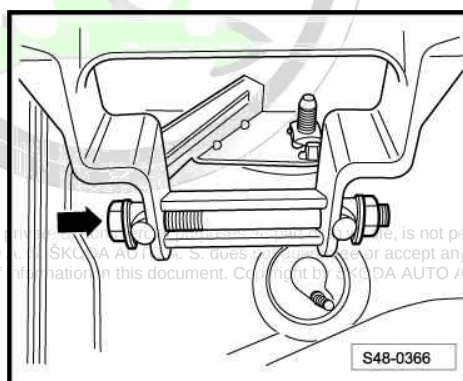
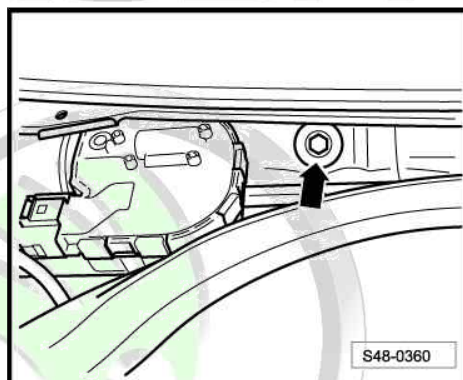
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“1.1.1 Overview of components - steering column, left-hand drive up to CW 44/2008”, page 320](#)
- ◆ ⇒ [“1.1.3 Summary of components - steering column, left-hand drive from CW 45/2008”, page 324](#)
- ◆ Plenum chamber cover ⇒ Body Work; Rep. gr. 66
- ◆ Dash panel ⇒ Body Work; Rep. gr. 70

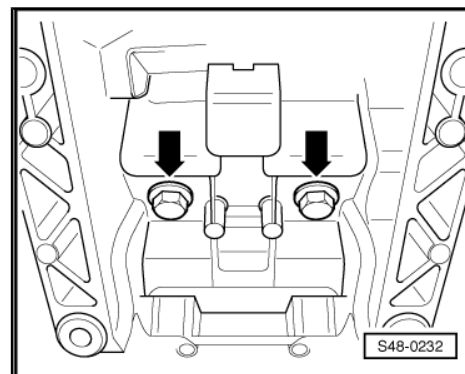
1.5.2 Removing and installing holder for steering column and frequency link, right-hand drive

Removing

- Remove steering column:
for vehicles up to CW 44/2008
⇒ ["1.4.2 Removing and installing steering column, right-hand drive vehicles to CW 44/2008", page 333](#)
for vehicles as of CW 45/2008
⇒ ["1.4.4 Removing and installing steering column, right-hand drive as of CW 45/2008", page 343](#) .
- Remove plenum chamber cover ⇒ Body Work; Rep. gr. 66 .
- Remove screw for frequency link -arrow- in the plenum chamber.
- Removing dash panel insert ⇒ Electrical System; Rep. gr. 90 .
- Unscrew fixing screw -arrow- of holder for steering column/frequency link.
- Release the fixing screws -1- of the frequency link -2-, while doing so raise the dash panel above the screws of the frequency link.
- Swivel the frequency link at the central pipe in the direction of the foot controls and pull out.



- Unscrew screws -arrow- below the holder.



- Remove screws -arrows- from holder at central pipe.



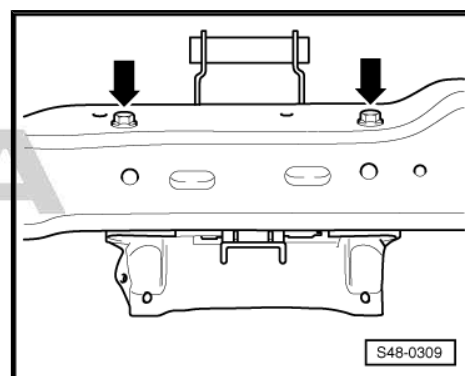
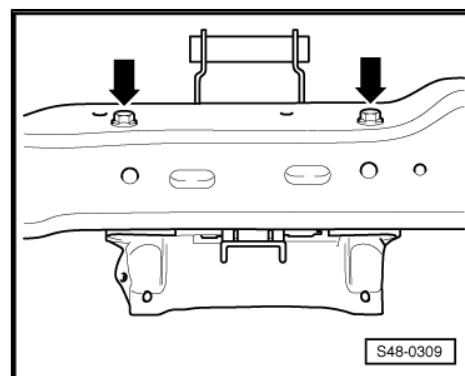
Note

The central pipe in the illustration is removed for purposes of clear presentation.

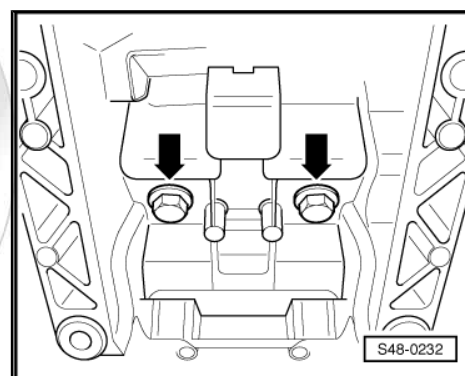
- Remove holder for steering column.

Installing

- Position the holder for the steering column at the central pipe and screw on the screws -arrows-.



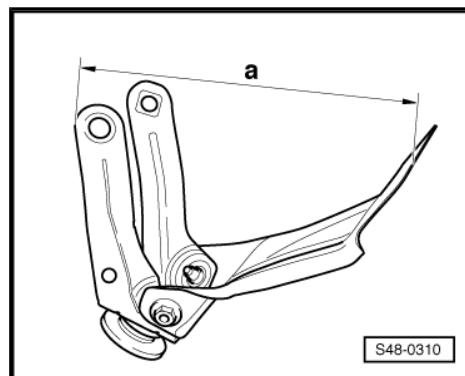
- Screw on the screws -arrows- below the holder.



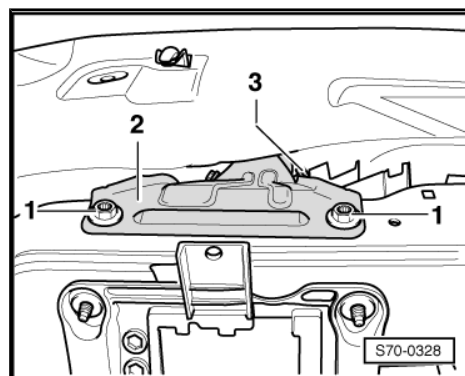
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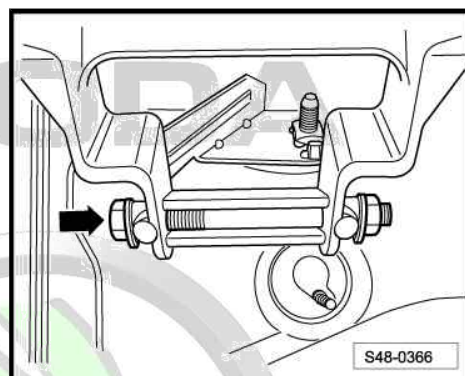
- Screw frequency link outside the vehicle.
- Respect dimension -a- = 167 mm.
- Insert the frequency link in the area above the foot controls.
- Swivel the frequency link on the central pipe upwards.



- Slightly screw on the fixing screws -1- of the frequency link -2-, while doing carefully raise the dash panel above the screws of the frequency link.



- Screw on fixing screw -arrow- of holder for steering column/frequency link.



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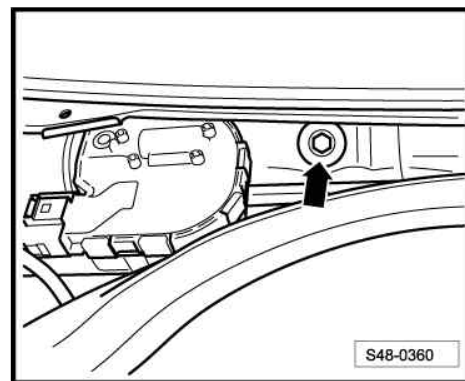
- Attach frequency link to the body, tighten screw -arrow- to tightening torque.
- Tighten fixing screws of frequency link to the specified tightening torque.
- Install the plenum chamber cover ⇒ Body Work; Rep. gr. 66 .
- Installing dash panel insert ⇒ Electrical System; Rep. gr. 90 .
- Install the steering column:

for vehicles up to CW 44/2008

⇒ ["1.4.2 Removing and installing steering column, right-hand drive vehicles to CW 44/2008", page 333](#)

for vehicles as of CW 45/2008

⇒ ["1.4.4 Removing and installing steering column, right-hand drive as of CW 45/2008", page 343](#)



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["1.1.2 Steering column summary of components, right-hand drive to CW 44/2008", page 322](#)
- ◆ ⇒ ["1.1.4 Steering column summary of components, right-hand drive from CW 45/2008", page 325](#)
- ◆ Plenum chamber cover ⇒ Body Work; Rep. gr. 66
- ◆ Dash panel insert ⇒ Electrical System; Rep. gr. 90



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2 Steering gear

⇒ [“2.1 Summary of components - steering gear”, page 356](#)

⇒ [“2.2 Removing and installing steering gear”, page 361](#)

⇒ [“2.3 Removing and installing bellows”, page 372](#)

⇒ [“2.4 Removing and installing track rod”, page 375](#)

⇒ [“2.5 Removing and installing track rod ends”, page 379](#)

⇒ [“2.6 Repairing steering box”, page 380](#)

2.1 Summary of components - steering gear

⇒ [“2.1.1 Summary of components - steering gear, left-hand drive, aluminium assembly carrier”, page 356](#)

⇒ [“2.1.2 Summary of components - steering gear, right-hand drive, aluminium assembly carrier”, page 358](#)

⇒ [“2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier”, page 359](#)

⇒ [“2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier”, page 360](#)

2.1.1 Summary of components - steering gear, left-hand drive, aluminium assembly carrier

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1 - Universal joint

2 - Screw

- ☐ M8 x 32
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["2.1 Summary of components - steering gear", page 356](#)

3 - Electrical line

4 - Power-steering gear

- ☐ with power steering control unit - J500-
- ☐ can be checked in the guided fault detection system with ⇒ Vehicle diagnostic tester

Vehicles from CW 22/09

- ☐ The 3rd generation power-assisted steering
- ☐ The steering angle sender - G85- is integrated in the steering gear and cannot be replaced separately
- ☐ with three point fixing at assembly carrier

5 - Wheel bearing housing

6 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 20 Nm + 90°

7 - Assembly carrier with consoles

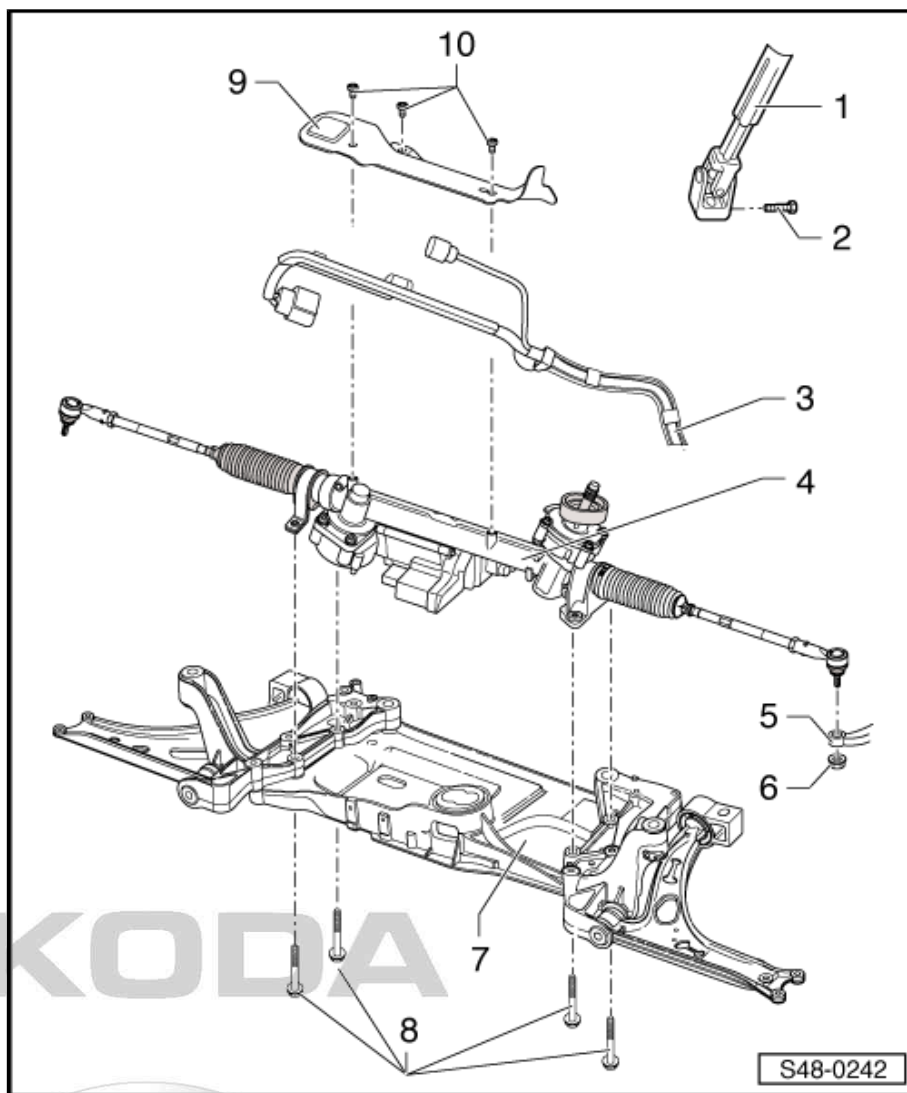
8 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ 50 Nm + 90°

9 - Protection plate

10 - Screw

- ☐ 6 Nm





2.1.2 Summary of components - steering gear, right-hand drive, aluminium assembly carrier

1 - Universal joint

2 - Screw

- ☐ M8 x 32
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["2.1 Summary of components - steering gear", page 356](#)

3 - Electrical line

4 - Protection plate

5 - Screw

- ☐ 6 Nm

6 - Power-steering gear

- ☐ with power steering control unit - J500-
- ☐ can be checked in the guided fault detection system with ⇒ Vehicle diagnostic tester

Vehicles from CW 22/2008

- ☐ The 3rd generation power-assisted steering
- ☐ The steering angle sender - G85- is integrated in the steering gear and cannot be replaced separately
- ☐ with three point fixing at assembly carrier

7 - Wheel bearing housing

8 - Nut

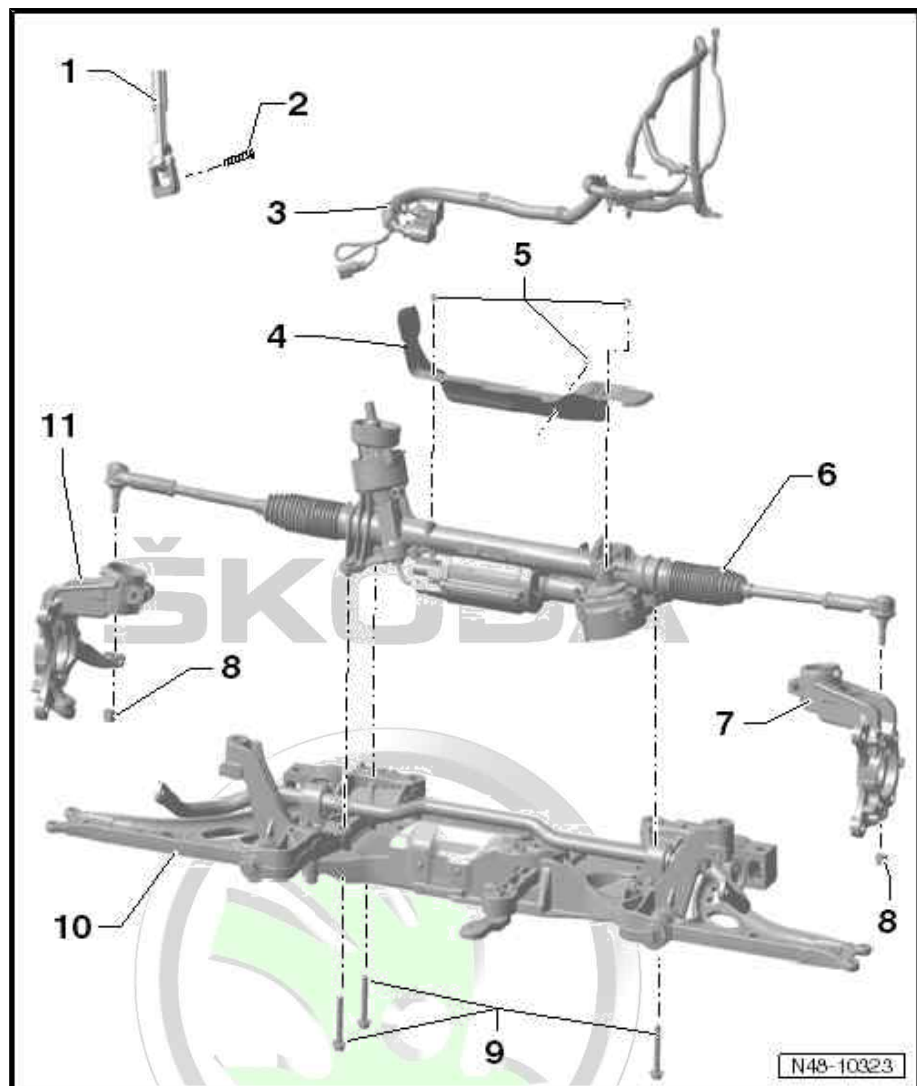
- ☐ self-locking
- ☐ replace after each removal
- ☐ 20 Nm + 90°

9 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ 50 Nm + 90°

10 - Assembly carrier with consoles

11 - Wheel bearing housing



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2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier

1 - Universal joint

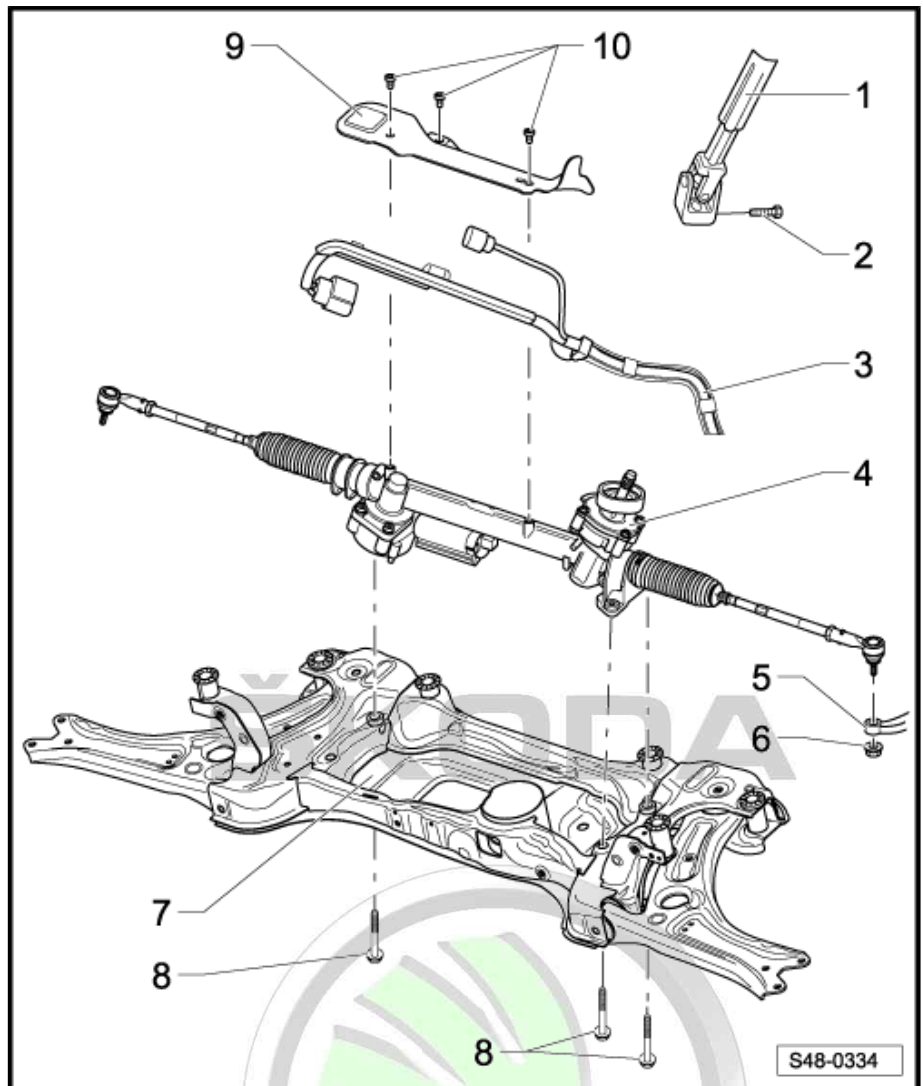
2 - Screw

- ☐ M8 x 32
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["2.1 Summary of components - steering gear", page 356](#)

3 - Electrical line

4 - Power-steering gear

- ☐ The 3rd generation power-assisted steering
- ☐ with power-assisted steering control unit - J500-
- ☐ The steering angle sender - G85- is integrated in the steering gear and cannot be replaced separately
- ☐ check in the targeted fault finding ⇒ Vehicle diagnostic tester
- ☐ after installing a new power-steering gear, adapt the steering angle sender - G85- ⇒ Vehicle diagnostic tester
- ☐ adapt the power-assisted steering control unit - J500- after installing a new power-steering gear ⇒ Vehicle diagnostic tester



5 - Wheel bearing housing

6 - Nut

- ☐ self-locking
- ☐ replace after each removal
- ☐ 20 Nm + 90°

7 - Assembly carrier made of steel sheet

8 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ 50 Nm + 90°

9 - Protection plate

10 - Screw

- ☐ 6 Nm

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2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier

1 - Universal joint

2 - Screw

- ☐ M8 x 32
- ☐ replace after each removal
- ☐ Tightening torque
⇒ ["2.1 Summary of components - steering gear", page 356](#)

3 - Electrical line

4 - Protection plate

5 - Screw

- ☐ 6 Nm

6 - Power-steering gear

- ☐ with power steering control unit - J500-
- ☐ can be checked in the guided fault detection system with ⇒ Vehicle diagnostic tester
- ☐ The 3rd generation power-assisted steering
- ☐ The steering angle sender - G85- is integrated in the steering gear and cannot be replaced separately
- ☐ with three point fixing at assembly carrier
- ☐ after installing a new power-steering gear, adapt the steering angle sender - G85- ⇒ Vehicle diagnostic tester
- ☐ adapt the power-assisted steering control unit - J500- after installing a new power-steering gear ⇒ Vehicle diagnostic tester

7 - Wheel bearing housing

8 - Nut

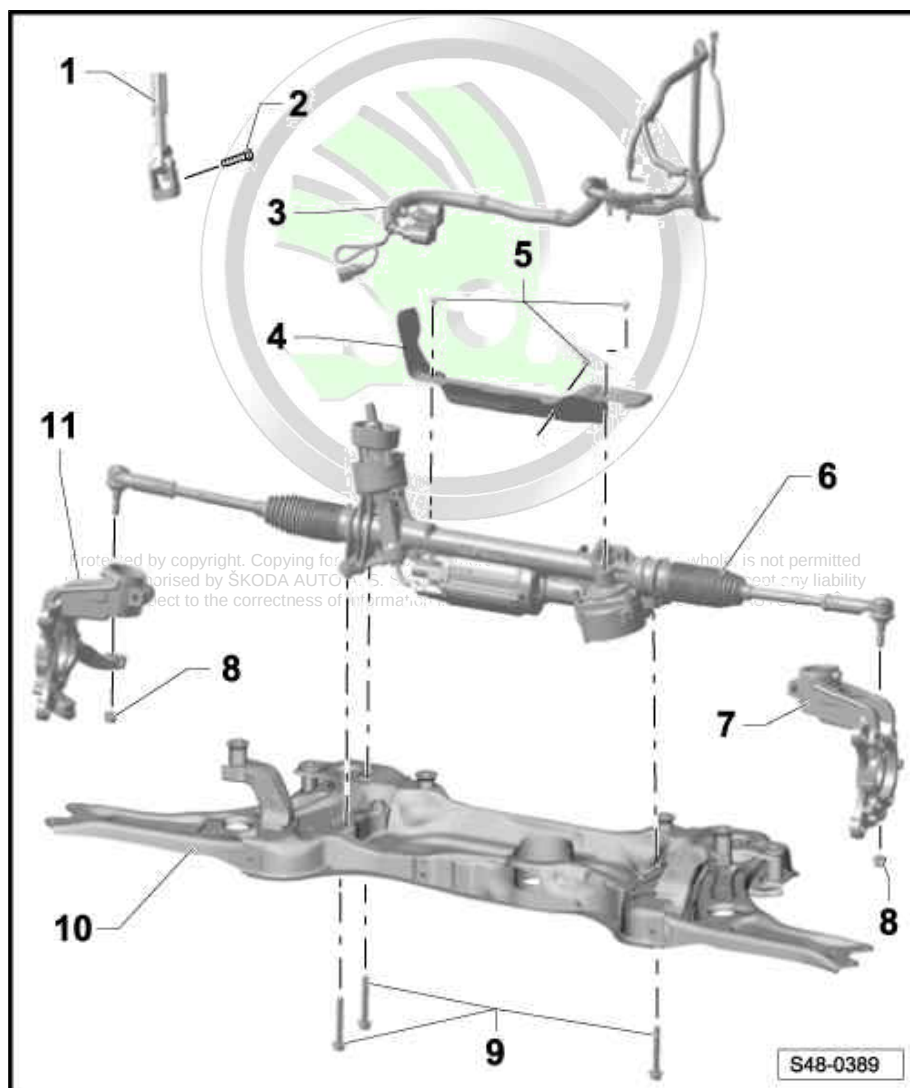
- ☐ self-locking
- ☐ replace after each removal
- ☐ 20 Nm + 90°

9 - Screw

- ☐ M10 x 76
- ☐ replace after each removal
- ☐ 50 Nm + 90°

10 - Assembly carrier made of steel sheet

11 - Wheel bearing housing



2.2 Removing and installing steering gear

⇒ [“2.2.1 Removing and installing steering gear, left-hand drive, aluminium assembly carrier”, page 361](#)

⇒ [“2.2.2 Removing and installing steering gear, right-hand drive, aluminium assembly carrier”, page 364](#)

⇒ [“2.2.3 Removing and installing steering gear, left-hand drive, sheet steel assembly carrier”, page 368](#)

⇒ [“2.2.4 Removing and installing steering gear, right-hand drive, sheet steel assembly carrier”, page 370](#)

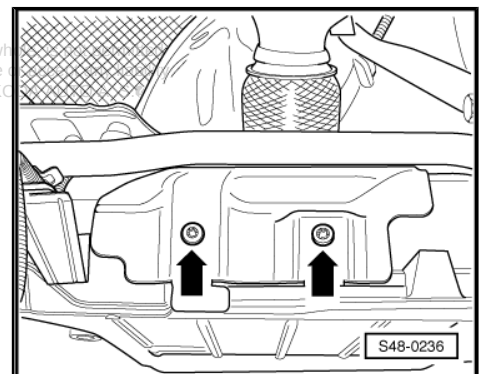
2.2.1 Removing and installing steering gear, left-hand drive, aluminium assembly carrier

Removing

- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

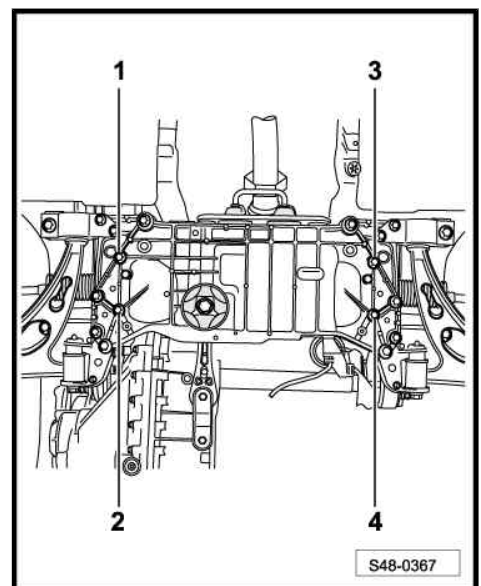
Vehicles up to CW 21/2009 (2nd generation power-assisted steering)

- Remove screws -arrows- from the heat shield.
- Remove assembly carrier from vehicle.



- Release screws -1-, -2-, -3- and -4-.

Vehicles as of CW 22/2009 (3rd generation power-assisted steering)





- Release screws -1- and -2- for steering gear.

Continued for all vehicles

- Remove assembly carrier with steering gear
⇒ [“2.5.1 Removing and installing assembly carrier with steering gear, aluminium assembly carrier, left-hand drive”, page 24](#) .
- Remove fixing screws for steering gear.
- Remove the steering gear from the assembly carrier.

Installing

Installation is carried out in the reverse order.

The threaded bushings of the steering gear must fit in the holes of the consoles.

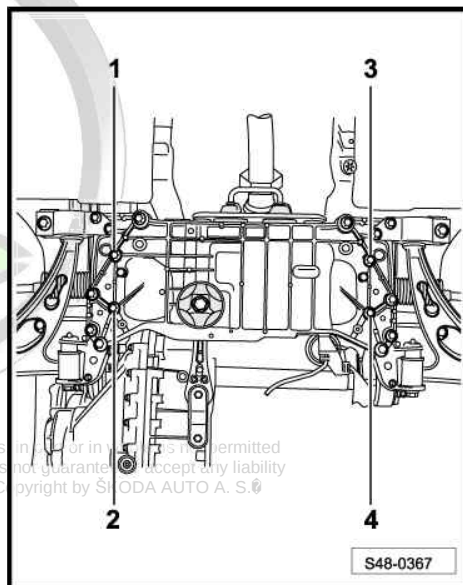
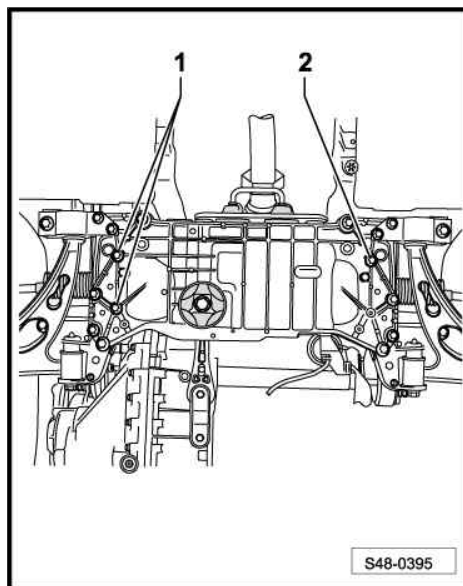


Note

- ◆ Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.
- ◆ When positioning the steering gear on the drive shaft make sure the seal on the steering gear is not damaged or twisted and rests flush against the body. Otherwise this could cause water penetration and noise.
- ◆ Make sure all sealing surfaces are clean.
- Position the steering gear on the assembly carrier so that the threaded bushings lock into the openings of the assembly carrier.

Vehicles up to CW 21/2009 (2nd generation power-assisted steering)

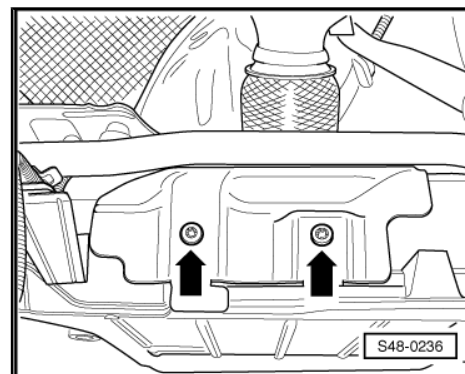
- Screw in new screws -1-, -2-, -3- and -4- and tighten to the recommended tightening torque.



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- Screw the heat shield to the assembly carrier.

Vehicles as of CW 22/2009 (3rd generation power-assisted steering)



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- Screw in new screws -1- and -2- for steering gear.

Continued for all vehicles

- Install assembly carrier with steering gear
⇒ [“2.5.1 Removing and installing assembly carrier with steering gear, aluminium assembly carrier, left-hand drive”, page 24](#) .
- Connect battery ⇒ Electrical System; Rep. gr. 27 .



Note

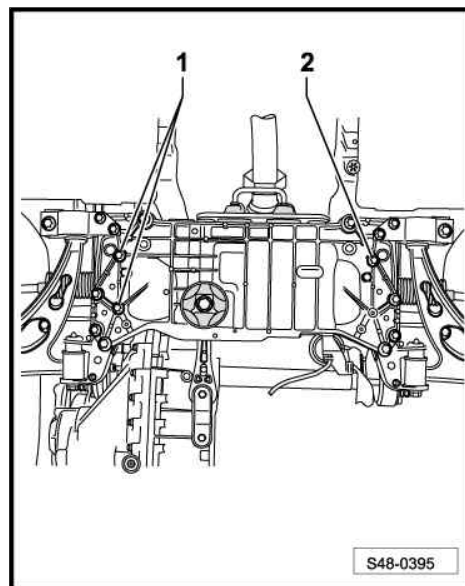
Observe the instructions after reattaching the battery ⇒ Electrical System; Rep. gr. 27 .

Vehicles up to CW 21/2009 (2nd generation power-assisted steering)

- Perform basic setting of the steering angle sender - G85- with the ⇒ Vehicle diagnostic tester.

Continued for all vehicles

If a new steering gear is installed, perform the basic setting of the power-assisted steering control unit - J500- and the steering angle sender - G85 - with the ⇒ Vehicle diagnostic tester



Note

It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“2.1.1 Summary of components - steering gear, left-hand drive, aluminium assembly carrier”, page 356](#)

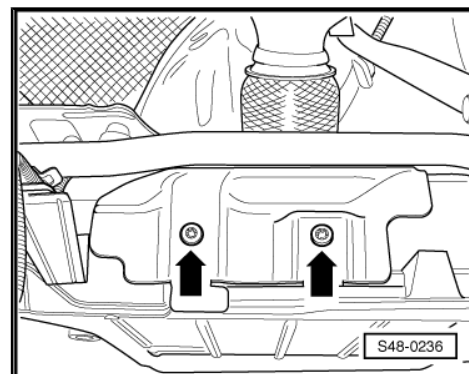
2.2.2 Removing and installing steering gear, right-hand drive, aluminium assembly carrier

Removing

- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

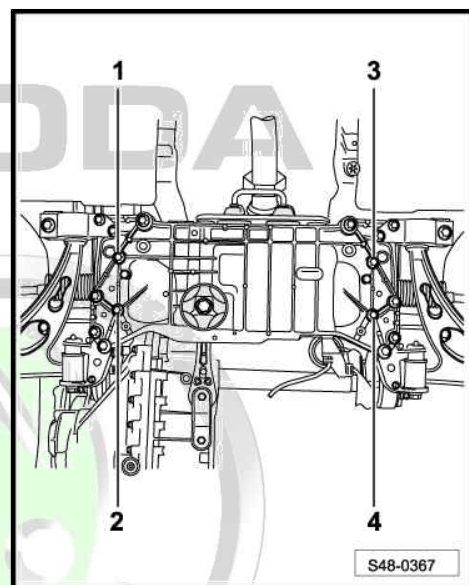
Vehicles up to CW 21/2008 (2nd generation power-assisted steering)

- Remove screws -arrows- from the heat shield.
- Remove assembly carrier from vehicle.



- Release screws -1-, -2-, -3- and -4-.

Vehicles as of CW 22/2008 (3rd generation power-assisted steering)



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- Release screws -1- and -2- for steering gear.

Continued for all vehicles

- Remove assembly carrier with steering gear
⇒ [“2.5.2 Removing and installing assembly carrier with steering gear, aluminium assembly carrier right-hand drive”, page 29](#).
- Release fixing screws for steering gear.
- Remove the steering gear from the assembly carrier.

Installing

Installation is carried out in the reverse order.

The threaded bushings of the steering gear must fit in the holes of the consoles.

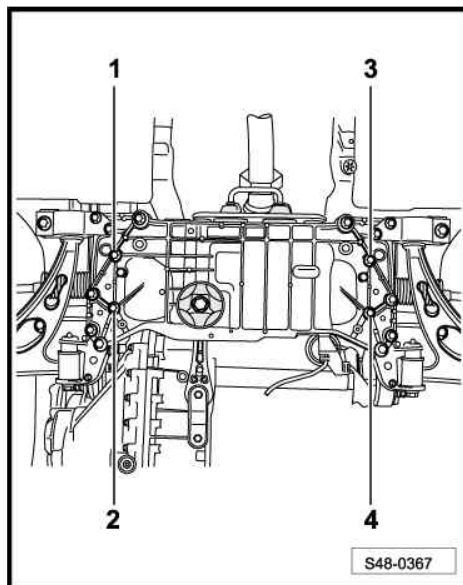
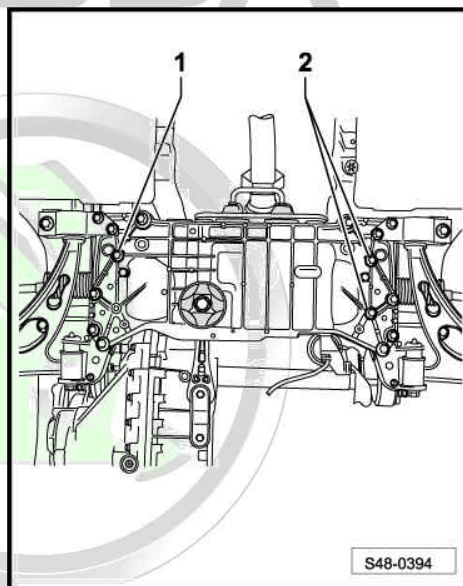


Note

- ◆ *Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.*
- ◆ *When positioning the steering gear on the drive shaft make sure the seal on the steering gear is not damaged or twisted and rests flush against the body. Otherwise this could cause water penetration and noise.*
- ◆ *Make sure all sealing surfaces are clean.*
- Position the steering gear on the assembly carrier so that the threaded bushings lock into the openings of the assembly carrier.

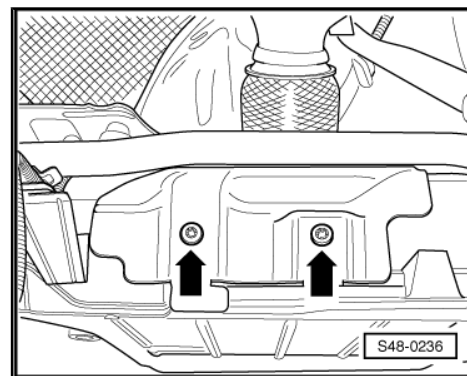
Vehicles up to CW 21/2008 (2nd generation power-assisted steering)

- Screw in new screws -1-, -2-, -3- and -4- and tighten to the recommended tightening torque.



- Screw the heat shield to the assembly carrier.

Vehicles as of CW 22/2008 (3rd generation power-assisted steering)



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- Screw in new screws -1- and -2- for steering gear.

Continued for all vehicles

- Install assembly carrier with steering gear
⇒ [“2.5.2 Removing and installing assembly carrier with steering gear, aluminium assembly carrier right-hand drive”, page 29](#) .
- Connect battery ⇒ Electrical System; Rep. gr. 27 .



Note

Observe the instructions after reattaching the battery ⇒ Electrical System; Rep. gr. 27 .

Vehicles up to CW 21/2008 (2nd generation power-assisted steering)

- Perform basic setting of the steering angle sender - G85- with the ⇒ Vehicle diagnostic tester.

Continued for all vehicles

If a new steering gear is installed, perform the basic setting of the power-assisted steering control unit - J500- and the steering angle sender - G85 - with the ⇒ Vehicle diagnostic tester



Note

It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#)

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

Tightening torques - summaries of components



Note

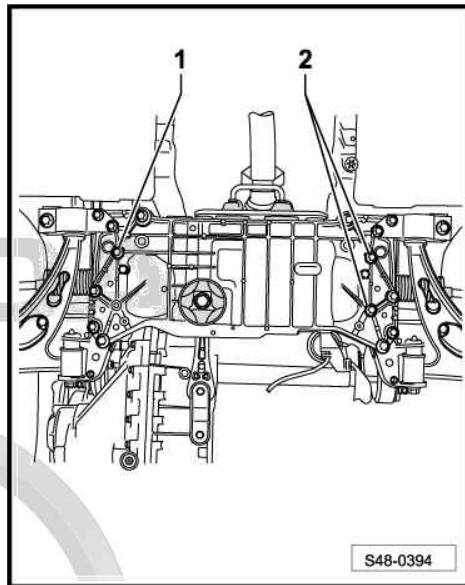
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“2.1.2 Summary of components - steering gear, right-hand drive, aluminium assembly carrier”, page 358](#)

2.2.3 Removing and installing steering gear, left-hand drive, sheet steel assembly carrier

Removing

- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove assembly carrier
⇒ [“3.5.1 Removing and installing assembly carrier with steer-](#)



ing gear, sheet steel assembly carrier, left-hand drive",
page 75 .

- Remove screws for steering gear -1- and -2- from assembly carrier.
- Raise the steering gear until the threaded bushings of the steering gear are pushed out of the assembly carrier.
- Raise the steering gear.

Installing

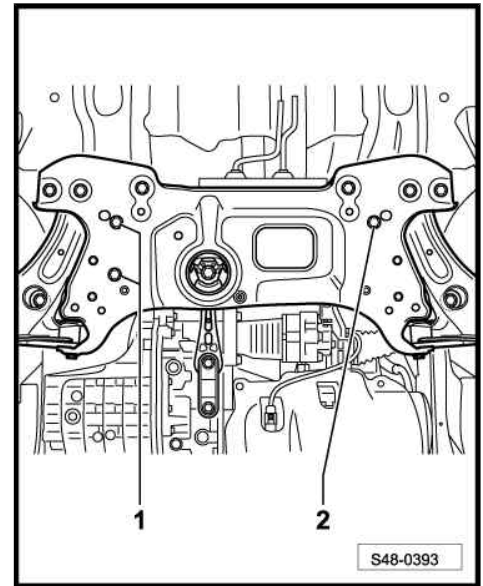
Installation is carried out in the reverse order.

The threaded bushings of the steering gear must fit in the holes of the assembly carrier.



Note

- ◆ *Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.*
 - ◆ *After positioning the steering gear on the drive shaft make sure the seal on the steering gear is not bent on the assembly plate and correctly seals the footwell opening. Otherwise this could cause water penetration and/or noise.*
 - ◆ *Make sure all sealing surfaces are clean.*
- Position the steering gear on the assembly carrier so that the threaded bushings lock into the openings of the assembly carrier.



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- Screw in the new screws for the steering gear -1- and -2- and tighten to the specified tightening torque.
- Install the assembly carrier on the body
⇒ [“3.5.1 Removing and installing assembly carrier with steering gear, sheet steel assembly carrier, left-hand drive”, page 75](#)



Note

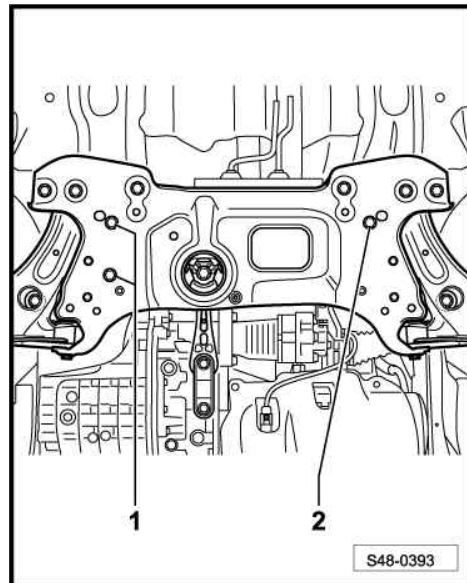
Make sure the steering gear boot is neither damaged nor twisted.

- Connect battery ⇒ Electrical System; Rep. gr. 27 .



Note

Observe the instructions after reattaching the battery ⇒ Electrical System; Rep. gr. 27 .



Note

*It is necessary to perform an axle alignment in the event of:
⇒ [“3.3 Axle alignment”, page 309](#) .*

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .*

If a new steering gear is installed, perform the basic setting of the power-assisted steering control unit - J500- and the steering angle sender - G85 - with the ⇒ Vehicle diagnostic tester

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ♦ ⇒ [“2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier”, page 359](#)

2.2.4 Removing and installing steering gear, right-hand drive, sheet steel assembly carrier

Removing

- Disconnect battery ⇒ Electrical System; Rep. gr. 27 .
- Remove assembly carrier
⇒ [“2 Front axle with aluminium assembly carrier”, page 10](#)

- Remove screws for steering gear -1- and -2- from assembly carrier.
- Raise the steering gear until the threaded bushings of the steering gear are pushed out of the assembly carrier.
- Raise the steering gear.

Installing

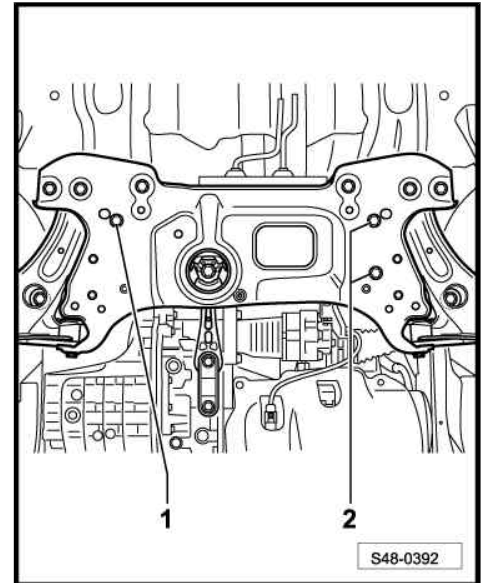
Installation is carried out in the reverse order.

The threaded bushings of the steering gear must fit in the holes of the assembly carrier.



Note

- ◆ *Coat the sealing sleeve on the steering gear with lubricant, e.g. lubricating soap, before installing the steering gear.*
- ◆ *After positioning the steering gear on the drive shaft make sure the seal on the steering gear is not bent on the assembly plate and correctly seals the footwell opening. Otherwise this could cause water penetration and/or noise.*
- ◆ *Make sure all sealing surfaces are clean.*
- Position the steering gear on the assembly carrier so that the threaded bushings lock into the openings of the assembly carrier.



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- Screw in the new screws for the steering gear -1- and -2- and tighten to the specified tightening torque.
- Install the assembly carrier on the body
⇒ ["2 Front axle with aluminium assembly carrier", page 10](#)



Note

Make sure the steering gear boot is neither damaged nor twisted.

- Connect battery ⇒ Electrical System; Rep. gr. 27 .



Note

Observe the instructions after reattaching the battery ⇒ Electrical System; Rep. gr. 27 .



Note

*It is necessary to perform an axle alignment in the event of:
⇒ ["3.3 Axle alignment", page 309](#) .*

- Perform a test drive
- Check the steering wheel position during the test drive.



Note

*If after the test drive and with the wheels pointing straight ahead the steering wheel is off straight, perform an axle alignment
⇒ ["3.3 Axle alignment", page 309](#) .*

If a new steering gear is installed, perform the basic setting of the power-assisted steering control unit - J500- and the steering angle sender - G85 - with the ⇒ Vehicle diagnostic tester

Tightening torques - summaries of components



Note

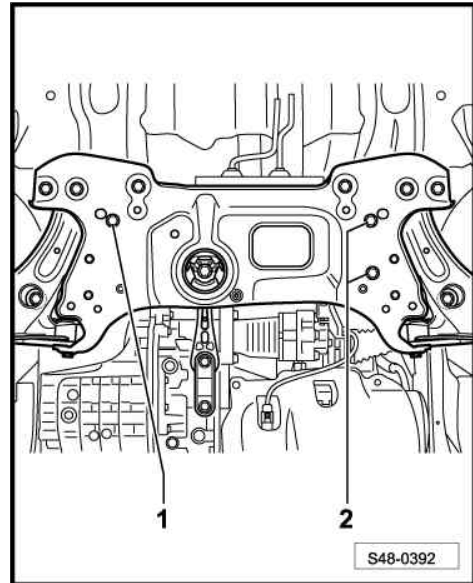
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)

2.3 Removing and installing bellows

Special tools and workshop equipment required

- ◆ Clamp pliers for steering gear e.g. -VAS 6199-
- ◆ Hose strap pliers , e.g. -V.A.G 1275-



Removing



Caution

If bellows are defective humidity and dirt penetrates into the steering gear. In the area of the serration on the gear rack, a tangible grease film must be present. If the grease film is not present, the steering gear must be replaced.

Replace the steering gear in the event of:

- ◆ Corrosion
- ◆ Damage
- ◆ Wear
- ◆ Soiling on the steering rack

- Turn steering wheel to the straight ahead position.
- Remove wheel.
- Clean outside of steering gear in the area of the bellows.

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While doing so, no dirt must get into the steering gear through the defective bellows.

- Mark the position of the nut -3- on the track rod.
- Remove track-rod end
⇒ ["2.5 Removing and installing track rod ends", page 379](#) .
- Clean outside of steering box in vicinity of boot.



Note

While doing so, no dirt must get into the steering gear through the defective bellows.

- Use the hose clip pliers - V.A.G 1275- to remove the spring clip -1-.
- Remove worm-type clamp.
- Remove bellows from the steering gear housing and track rod.



Note

- ♦ *If corrosion, damage, wear or traces of dirt are visible on the gear rack, the steering gear must be replaced completely.*
- ♦ *If no grease film is visible on the gear rack, the steering gear must also be replaced completely.*

Installing

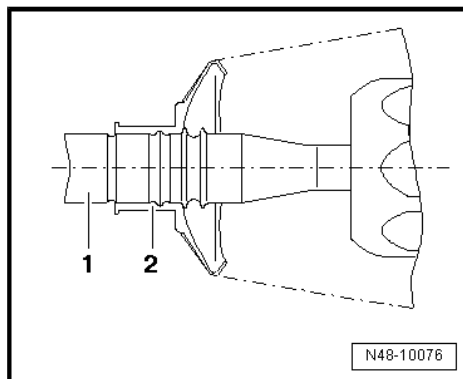
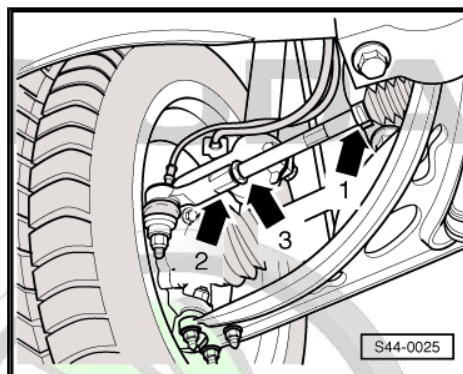
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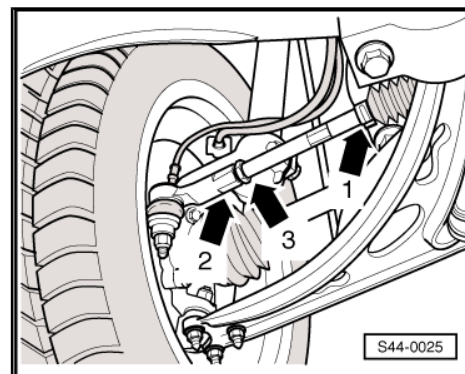
Caution

The gear rack must not be greased.

- Turn steering wheel to the straight ahead position.
- Slide new clamps and bellows onto the track rod.
- Install the tie rod end
⇒ ["2.5 Removing and installing track rod ends", page 379](#) .
- Lightly grease the sealing surfaces of the bellows to the track rod with grease from the repair kit.
- Slide bellows -2-, as shown in the illustration, onto the track rod -1-.



- Secure spring clip -1- onto the bellows with the hose binding claw e.g. -V.A.G 1275- .
- Lightly grease the sealing surfaces of the bellows on the steering gear housing with grease from the repair kit.
- Slide bellows onto the steering gear housing up to the stop.

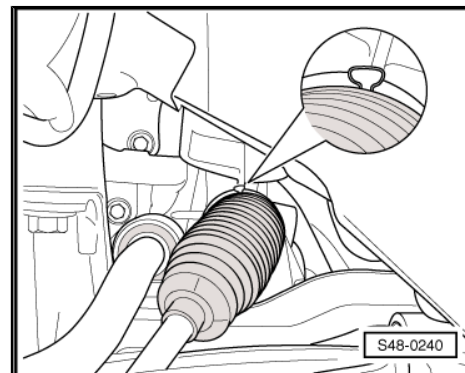


- Clamp new worm-type clamp with clamp pliers for steering gear e.g. -VAS 6199- at the steering gear as far as shown in the figure.

Further installation occurs in reverse order.

After installing, perform axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

- Perform basic setting of the steering angle sender - G85- with the ⇒ Vehicle diagnostic tester.
- Perform basic setting of the steering ⇒ Vehicle diagnostic tester.



Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.6 Repairing steering box”, page 380](#)

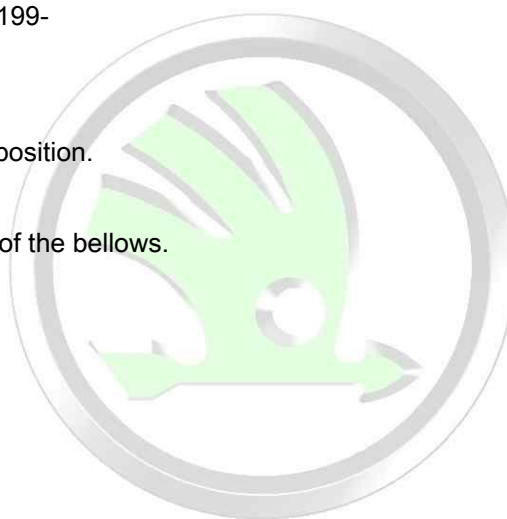
2.4 Removing and installing track rod

Special tools and workshop equipment required

- ◆ Open-jawed wrench 38 , e.g. -V.A.G 1923-
- ◆ Hose strap pliers , e.g. -V.A.G 1275-
- ◆ Clamp pliers for steering gear e.g. -VAS 6199-
- ◆ Ball joint extractor - 3287A-

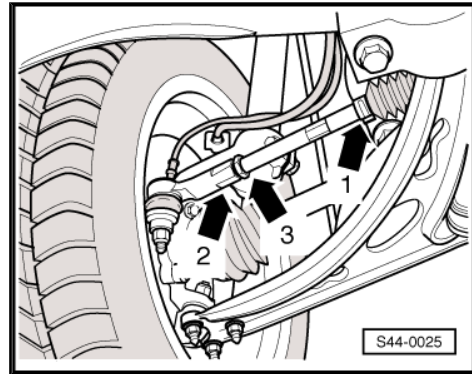
Removing track rod:

- Turn steering wheel to the straight ahead position.
- Remove wheel.
- Clean outside of steering gear in the area of the bellows.





- Release nut -3- while counterholding the track rod end -2-.

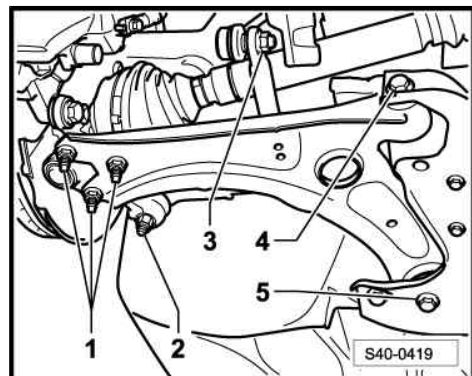


- Loosen nut from track rod end -2-, but do not unscrew yet.

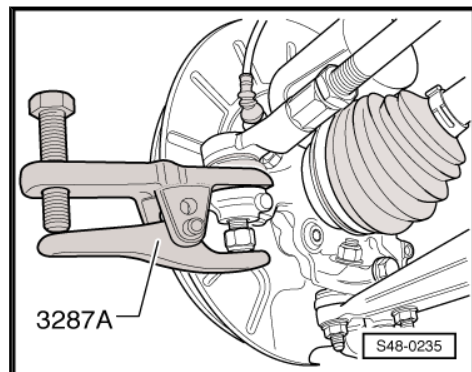


Note

To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.



- Press the track rod end off the wheel-bearing housing with the ball joint extractor - 3287A- .
- Push track rod end off wheel bearing housing and remove nut.
- Use the hose clip pliers - V.A.G 1275- to remove the spring clip -1-.
- Remove worm-type clamp.
- Remove bellows from the steering gear housing and track rod.
- Release the spring clip with the hose binding claw - V.A.G 1275- from the bellows and slide the spring clip onto the track rod.
- Remove the clamp on the steering gear and push the bellows from the steering gear onto the tie rod.



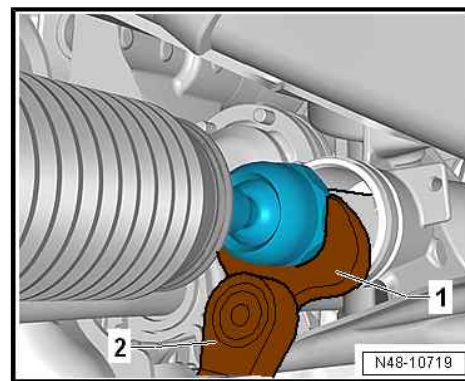
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- Remove track rod.
- 1 - Open-jawed wrench 38 , e.g. -V.A.G 1923-
- 2 - Torque wrench



Note

- ◆ If corrosion, damage, wear or traces of dirt are visible on the gear rack, the steering gear must be replaced completely.
- ◆ If no grease film is visible on the gear rack, the steering gear must also be replaced completely.
- ◆ Inspect bellows for wear »cuts, splits«; replace if necessary.



Installing

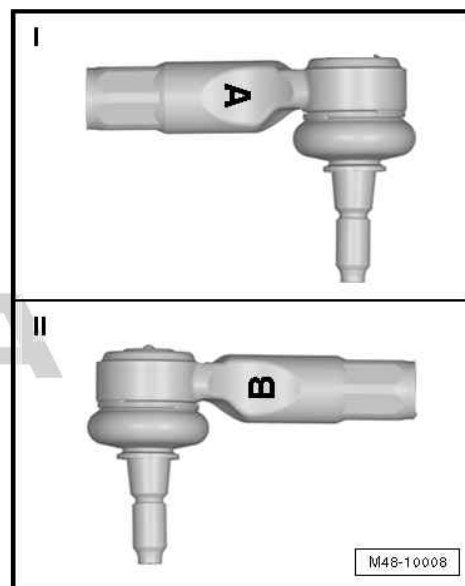
Installation is performed in the reverse order, pay attention to the following points:



Caution

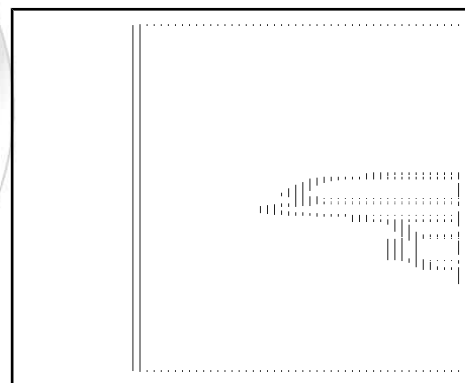
The gear rack must not be greased.

- Make sure that correct track rod ball joint is installed on each side.
- I - Track rod ball joint on right marked with an "A"
- II - Track rod ball joint on left marked with a "B"
- Turn steering wheel to the straight ahead position.
- Push worm-type clamp, bellows and spring clip onto the track rod.



- Screw the track rod into the track rod end, until the dimension -a- is reached.

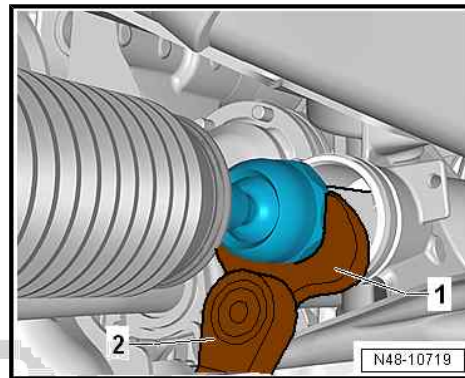
a - 371 ± 1 mm



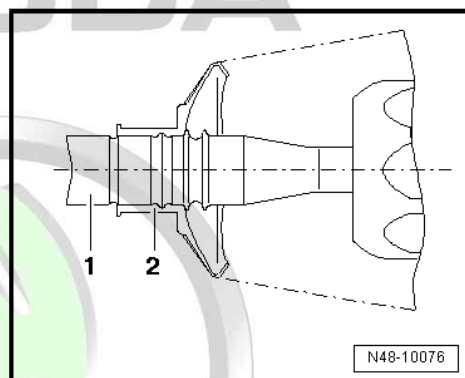
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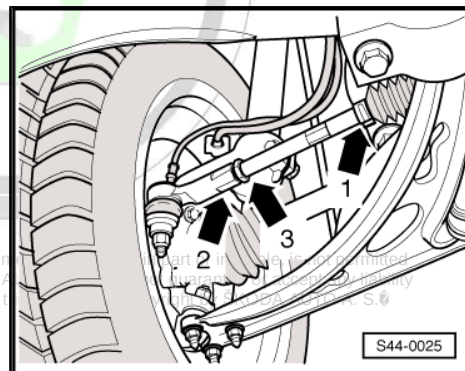
- Installing track rod.
- 1 - Open-jawed wrench 38 , e.g. -V.A.G 1923-
- 2 - Torque wrench
- Lightly grease the sealing surfaces of the bellows to the track rod with grease from the repair kit.



- Slide bellows -2-, as shown in the illustration, onto the track rod -1-.



- Secure spring clip -1- onto the bellows with the hose binding claw e.g. -V.A.G 1275- .
- Lightly grease the sealing surfaces of the bellows on the steering gear housing with grease from the repair kit.
- Slide bellows onto the steering gear housing up to the stop.



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- Clamp new worm-type clamp with clamp pliers for steering gear e.g. -VAS 6199- at the steering gear as far as shown in the figure.

Further installation occurs in reverse order.

After installing, perform axle alignment
⇒ [“3.3 Axle alignment”, page 309](#) .

- Perform basic setting of the steering angle sender - G85- with the ⇒ Vehicle diagnostic tester.

Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ [“2.5 Removing and installing track rod ends”, page 379](#)
- ◆ ⇒ [“2.1.1 Summary of components - steering gear, left-hand drive, aluminium assembly carrier”, page 356](#)
- ◆ ⇒ [“2.1.2 Summary of components - steering gear, right-hand drive, aluminium assembly carrier”, page 358](#)
- ◆ ⇒ [“2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier”, page 359](#)
- ◆ ⇒ [“2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier”, page 360](#)

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2.5 Removing and installing track rod ends

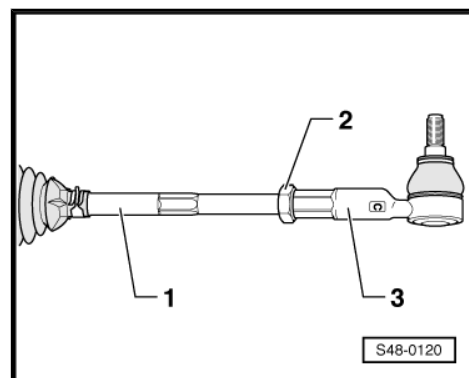
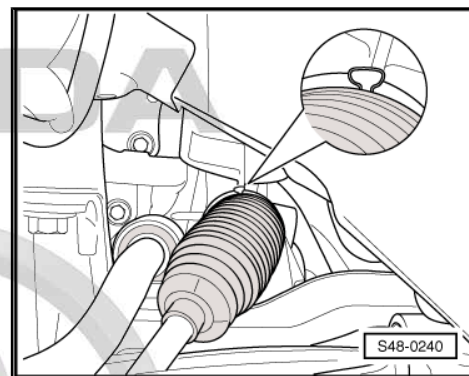
Special tools and workshop equipment required

- ◆ Ball joint extractor - 3287A-

Removing

The track rod ends can be replaced with the track rods and the power steering gear installed.

- Remove wheel.
- Release hexagon nut (lock nut) -2-.





- Loosen nut from track rod end, but do not unscrew yet.



Note

To protect the thread, screw the nut a couple of thread turns onto the stud of the track rod end.

- Remove the steering joint/track rod from the wheel-bearing housing with the ball joint extractor - 3287A- .
- Unscrew nut for suspension link/track rod.
- Pull track rod end out of the steering arm.
- Unscrew track rod end -3- from track rod -1-.

The surrounding components are not shown to simplify the illustrations.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Make sure that correct track rod ball joint is installed on each side.

I - Track rod ball joint on right marked with an "A"

II - Track rod ball joint on left marked with a "B"

- Screw track rod ball joint onto track rod as far as previously applied mark and secure with lock nut.
- Insert track rod ball joint into wheel bearing housing.
- Bolt track rod ball joint with new nut.
- Carry out axle alignment ⇒ ["3.3 Axle alignment", page 309](#) .

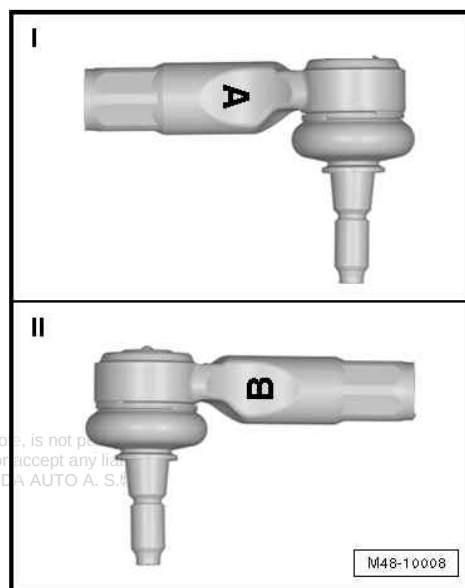
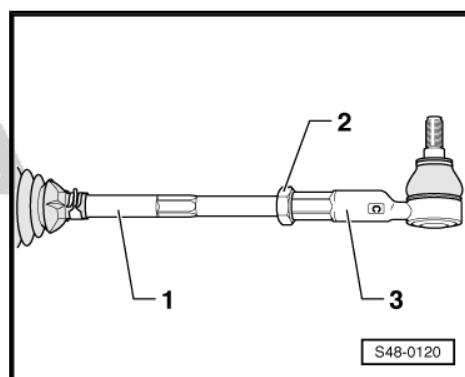
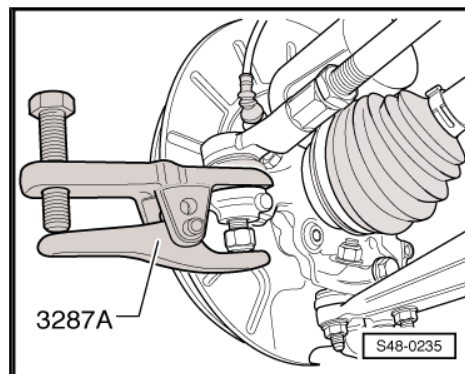
Tightening torques - summaries of components



Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ◆ ⇒ ["2.5 Removing and installing track rod ends", page 379](#)
- ◆ ⇒ ["2.1.1 Summary of components - steering gear, left-hand drive, aluminium assembly carrier", page 356](#)
- ◆ ⇒ ["2.1.2 Summary of components - steering gear, right-hand drive, aluminium assembly carrier", page 358](#)
- ◆ ⇒ ["2.1.3 Summary of components - steering gear, left-hand drive, sheet steel assembly carrier", page 359](#)
- ◆ ⇒ ["2.1.4 Summary of components - steering gear, right-hand drive, sheet steel assembly carrier", page 360](#)



2.6 Repairing steering box

1 - Right track rod end

- ☐ Marked with "A"
⇒ [page 380](#)
- ☐ Removing and installing
⇒ ["2.5 Removing and installing track rod ends"](#),
[page 379](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

2 - Nut

- ☐ When tightening the nut, the track rod end must be counterheld with a wrench.
- ☐ 70 Nm

3 - Spring strap clamp

4 - Collar

- ☐ check for damage
- ☐ must not be twisted after setting the wheel toe
- ☐ Removing and installing
⇒ ["2.3 Removing and installing bellows"](#),
[page 372](#)

5 - Clamp

- ☐ replace after each removal
- ☐ tensioning ⇒ [page 375](#)

6 - Track rod

- ☐ Removing and installing
⇒ ["2.4 Removing and installing track rod"](#),
[page 375](#)
- ☐ 100 Nm

7 - Screw

- ☐ 6 Nm

8 - Seal

9 - Heat shield

10 - Steering gear

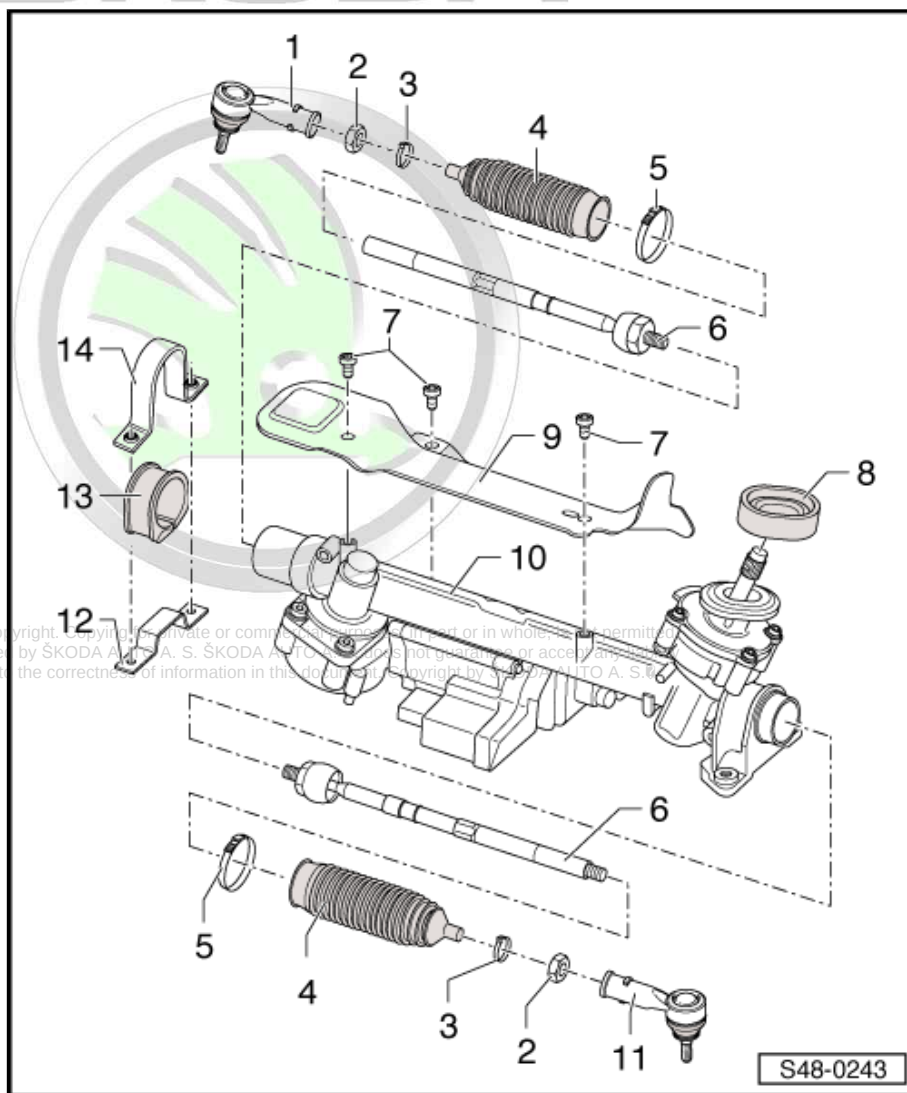
- ☐ with power steering control unit - J500-
- ☐ can be checked in the guided fault detection system with ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ ["2.2 Removing and installing steering gear"](#), [page 361](#)

Right-hand drive as of CW 22/2008 and left-hand drive as of CW 22/2009

- ☐ The 3rd generation power-assisted steering
- ☐ The steering angle sender - G85- is integrated into the steering gear and cannot be replaced separately.
- ☐ with three point fixing at assembly carrier
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

11 - Left track rod end

- ☐ Marked with "B" ⇒ [page 380](#)
- ☐ Removing and installing ⇒ ["2.5 Removing and installing track rod ends"](#), [page 379](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts





12 - Support

- ☐ not present on vehicles with 3rd generation steering gear

13 - Rubber bearing

- ☐ not present on vehicles with 3rd generation steering gear

14 - Clamp with nuts

- ☐ replace if thread is damaged
- ☐ not present on vehicles with 3rd generation steering gear



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